Health Care Financing Grants and Contracts Reports

Eight Years' Experience With A Second Opinion Elective Surgery Program: Utilization and Economic Analyses

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Eight Years' Experience With A Second Opinion Elective Surgery Program: Utilization and Economic Analyses

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EXECUTIVE SUMMARY

The fact that the rate of elective surgical procedures performed has increased 24 percent from 1971 to 1978 is as puzzling as it is disturbing. Explanations for this dramatic increase have been suggested, but it is widely believed that many factors collectively are responsible for the phenomenon. It is believed, for example, that too many physicians are performing surgery, that the workloads of the surgeons are on the light side, that there are too many physicians in surgical residency programs, and that "unnecessary" surgery probably exists. These factors, among others, all serve to underscore the need to modify or to control the situation. Second opinion elective surgery programs are designed to stem the rise in surgery and its concomitant costs.

Second opinion elective surgery programs are designed primarily to assist patients in making a more informed decision once elective surgery has been recommended. The practical focus is on consumer education; i.e., informing and educating the patient about his/her condition as well as the implications of the condition. The fact that the second opinion consultation is prospective rather than retrospective is one of the benefits of the program. That is, the need for surgery is evaluated before an operation is performed, thus permitting the patient to choose among other medical alternatives. In many cases, the costs and risks of surgery can be avoided without jeopardizing the health and well-being of the patient.

Physicians, too, can benefit from second opinion programs. No matter how careful and thorough a physician is, it is often helpful to seek another opinion from a peer. The indications for many surgical procedures are imprecise, at best, and legitimate differences in judgment often can arise.

Indeed, the lack of consistency or agreement in surgical decision making is one underlying rationale for the development of second opinion programs. Although second opinion programs are not designed to quantify differences of opinion between physicians, these programs may indirectly influence physicians' behavior. The fact that a physician knows that his/her recommendation for surgery may be reviewed may influence the type of recommendation made (Sentinel Effect).

The Sentinel Effect is not a new phenomenon as it has been shown repeatedly in medical and sociological studies that knowledge of the existence of surveillance or monitoring influences the behavior of those being observed or monitored. Lembcke's study on hysterectomies showed that the rate of this surgical procedure dropped dramatically before the study's results were disseminated because the staff was aware that they were being observed. The "Hawthorne Effect", described in numerous sociological studies, produces similar results.

The mechanisms of second opinion programs (voluntary and mandatory) are fairly straightforward. For those who have been recommended for elective, non-emergency surgery, a second opinion consultation with a Board certified surgeon is scheduled (those with gynecological conditions see a Boarded gynecologist, those with orthopedic problems see a Boarded orthopedist, etc.). The consultant examines the patient and either confirms or does not confirm the recommendation for surgery. In the former, the consultant has no doubts that surgery should be performed. In the latter, the consultant feels that surgery is not the most appropriate therapeutic next step. The consultant may feel that medical treatment and/or frequent examinations are preferable to surgery, that more conservative care is more appropriate (i.e. physical therapy), or that there is no pathological justification for surgery.

Regardless of the consultant's recommendation, the final decision to undergo surgery or not is made by the patient. There is no out-of-pocket expenditure by the patient, as the sponsoring organization pays for the full costs of the consultation and any ancillary tests requested by the consultant. A third opinion, "tie breaker", is available at no charge should the patient so request.

The Cornell second opinion program, the longest running program which has been in continuous existence since 1972, is the only program to have accumulated statistics on both voluntary and mandatory second opinion programs. The study population for the Cornell-New York Hospital second opinion program consists of members and dependents of several Taft-Hartley health and welfare Funds in the greater New York City area. Within the voluntary second opinion program there were a total of 470,000 eligible individuals and within the mandatory program there were a total of 273,800 eligible individuals. Since its inception, almost 12,000 second opinion consultations have been screened.

Findings consistently have shown that roughly one-third of those voluntarily seeking a second opinion consultation and 18 percent of those who were required to seek a second opinion consultation were not confirmed for the operation by the Board certified panel consultant. The data also have shown that within both the voluntary and mandatory programs, those initially recommended for knee surgery, bunionectomies, hysterectomies, and prostatectomies consistently have had the highest rates of non-confirmation.

Findings from the first follow up interview (conducted 6 months from the date of the consultation) clearly show that the overwhelming majority within both the voluntary and mandatory groups who were not confirmed for surgery had not had the operation performed. Follow up evaluation studies of the program participants further indicate that the majority of those who had been not confirmed for surgery reported that they decided against the surgery on the basis of the second opinion consultant's examination.

Data from the second follow up interview (conducted 12 months from the date of the consultation) show that within the voluntary group, of those not confirmed for surgery, 78.2 percent had not had the surgery performed. Moreover, the number of individuals who reported receiving no medical treatment during the year's time is of particular interest. There were 288 (41.6%) individuals within the voluntary group and 236 (51.3%) within the mandatory group, for example, who were not confirmed for surgery who neither had the operation performed nor reported receiving any medical treatment (examinations, medication, therapy, etc.). This not confirmed, no surgery performed, no medical treatment group represents potential surplus surgery.

While the second opinion program can serve to screen potential surplus surgery, it also acts to reassure the patient that surgery is in his or her best interest. Findings show that the majority of those in both the voluntary and mandatory groups who were confirmed for surgery did have the operation performed, the overwhelming majority having the operation performed within three months from the date of the consultation. As was true with those who were not confirmed for surgery who decided to have the operation (patient prerogative), if surgery is elected, it is scheduled fairly soon after the second opinion consultation.

Among those confirmed for surgery, however, there were 25.3 percent within the voluntary group and 12.3 percent within the mandatory group who had not had surgery performed one year from the date of their consultation. These individuals had been advised by two physicians, at least one of whom was a Board certified surgeon, to have the surgery. This confirmed for surgery, no surgery performed cohort is labeled the population at risk.

A cost benefit analysis of the Cornell-New York Hospital second opinion consultation program administered on behalf of the Building Service Local 32B-J Health Fund indicated that substantial net savings were realized both by the Health Fund and its covered beneficiaries.* Comparing medical utilization histories of the not confirmed for surgery and the confirmed for surgery groups in the first year after receipt of the consultation indicates that the not confirmed group spent $361,706 less on medical care than the confirmed group. Because of the avoidance of surgery, the not confirmed for surgery group had fewer work loss, home loss, and restricted activity days. This savings (productivity gain) was valued at $172,943. Savings from reduced medical care utilization and increased productivity totaled $534,649.

Total costs incurred by the second opinion program during the two year study period (1977-1978) were $203,300. Total expenditures for consultations and associated ancillary procedures totaled $101,520 and administrative costs were $78,700. Out-of-pocket costs borne by program participants was estimated at $23,080.

Merging the estimates of program benefit and cost yields a benefit cost ratio of 2.63. That is, for every $1.00 of cost incurred, $2.63 of benefits occurred. The demonstrated cost savings potential of a mandatory second opinion program justifies the inclusion of such programs in the array of cost containment initiatives already adopted or under consideration as a means of controlling the rise in medical care costs.

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* Mandatory Second Opinion Program

Chapter 1

Introduction: Scope Of The Problem

Surgical Utilization In The United States

The incidence of surgery in the United States has been the subject of intense review and study during the past decade. Statistics compiled by the National Center for Health Statistics clearly show that there has been a dramatic increase in the number and rate of surgical procedures performed, particularly during the 1970's.[1-5] Whereas the surgical rate per 100,000 population had been fairly stable and consistent with population growth, since 1971, the rate of surgery has increased over 4 times faster than the increase in population growth. The rate of surgical procedures performed from 1965 through 1978 increased 25.5 percent (from 1971 through 1978, the rate increased 24.3 percent). Table 1 depicts the number and rate of surgical procedures performed from 1965 through 1978.

The increase in the number of surgical procedures performed has been striking for several specific procedures. Table 2 shows the trend in utilization from 1971 through 1978 for fifteen of the most commonly performed elective operations. Hysterectomies, one of the most frequently performed operations in the U.S., increased 13 percent. However, it should be noted that since 1975, the number of hysterectomies performed has declined. Other elective procedures have increased more dramatically. Knee surgery, for example, increased 70.3 percent while cataract surgery increased 46.9 percent and prostate surgery increased 43.5 percent. Conversely, appendectomies, used as an estimate of emergency surgery, decreased by 6.0 percent, and tonsillectomies and/or adenoidectomies decreased 43.3 percent from 1971 through 1978.

Analysis of the nationwide data by specific region of the U.S. (Northeast,

TABLE 1

Number and Rate of Operations Performed for Inpatients Discharged from Short Stay Hospitals in the United States, by Year.

Year	# in 1,000s	Rate per 100,000
1965 - all operations	14679	7735
- operations excluding obstetrical procedures	13866	7306
1971 - all operations	15774	7805.3
- operations excluding obstetrical procedures	14802	7324.2
1973 - all operations	18426	8951.8
- operations excluding obstetrical procedures	17349	8428.1
1975 - all operations	20040	9585
- operations excluding obstetrical procedures	18786	8985
1976 - all operations	20086	9538.7
- operations excluding obstetrical procedures	18804	8930
1977 - all operations	21159	9972.1
- operations excluding obstetrical procedures	19748	9307.0
1978 - all operations	20754	9703.8
- operations excluding obstetrical procedures	19285	9016.8

Source: National Center for Health Statistics, Hospital Discharge Survey.

TABLE 2

Number of Selected Operations Performed for Inpatients Discharged
from Short-Stay Hospitals in the United States,
1971, 1973, 1975, 1976, 1977, 1978

	Number in Thousands							
Procedure	1971	1973	1975	1976	1977	1978	% Change 1971-1978	% Change 1977-1978
Appendectomy	318	339	319	306	342	299	- 6.0	- 12.6
Cholecystectomy	373	411	442	442	446	432	15.8	- 3.1
Dilation & Curettage	769	934	977	983	995	967	25.7	- 2.8
Extraction of the Lens	243	279	333	322	350	357	46.9	2.0
Herniorrhaphy	692	746	788	723	749	703	1.6	- 6.1
Hysterectomy	570	690	725	679	706	644	13.0	- 8.8
Prostatectomy	207	249	266	269	299	297	43.5	- 0.7
Surgery of the Back	123	147	149	168	166	149	21.1	- 10.2
Surgery of the Knee	101	119	154	152	166	172	70.3	3.6
T and/or A	967	884	685	629	617	548	- 43.3	- 11.2
All Operations	15774	18426	20040	20086	21159	20754	31.6	- 1.9

Source: National Center for Health Statistics, Hospital Discharge Survey

North Central, South, West) clearly shows that there are differences in rates among geographic regions. A more complete analysis and discussion of this variation has been presented.[6] Small-scale studies too have shown differences in rates (particularly for operations classified as discretionary or elective) within states and between neighboring communities.[7,8,9] While explanations for the rapid increase in surgical utilization are elusive, at best, there have been a number of studies conducted to understand better the causes and correlates of the situation.

Explanations For The Increase In Surgical Utilization

The decision to perform a given surgical procedure has been studied by grouping factors involved in the decision to perform a given surgical procedure into "intrinsic" factors (variables clearly within the patient himself) and "extrinsic" factors (variables related to the surgeon and/or the hospital).[10] Others have looked at the relationship of specific variables, such as socio-economic factors, and surgical utilization.[11] There are those who feel that the increase in surgical utilization is determined by the patient while others feel that it is determined by the physician.[12,13] Others have shown that the accessibility to medical care is a deciding factor[14] while more recent studies have purportedly shown that patient admissions for surgery expanded to fill beds, operating suites, and surgeons' time.[15] An effect of various payment mechanisms and of various organizations of health care services have been suggested;[16,17] however, not all prepaid group plans have shown lower surgical rates.[18] The growth of "third party" payment, too, is thought to be a contributing factor.

The development of new technology and treatment procedures may account for some of the increase as advances in technology have permitted the surgeon to operate on patients who previously would have been treated medically. Microsurgical techniques, for example, have been developed in each surgical specialty and specialized techniques such as phacoemulsification intraocular lens implantation and cardiac catheterization are widely used. Yet, one may legitimately question whether these advances can sufficiently justify, or can account for, the tremendous increases in specific surgical subspecialties.

One factor which has been suggested more frequently than the others is that there may be too many physicians performing surgery for the needs of the population, and that this situation may lead to excessive surgery being performed.[20,21,22] Indeed, in addition to the United States having the highest rate of surgery in the world, it also has the highest ratio of surgeons to population. In 1970, for example, roughly 92,600 of the 272,000 physicians in active practice indicated that they perform surgery and it was estimated that there were 42 surgeons per 100,000 population. By 1976, the number of practicing surgeons increased to 98,667 and there were 46 surgeons per 100,000 population.[23,24] There is no indication that the production of surgeons will abate in the near future despite the repeated call to reduce the number of surgical residency positions offered.[25,26]

In summary, it is generally agreed that many factors contribute to the increased utilization of surgical services and no one explanation is sufficient to account for the rise. Moreover, it is not clear whether a high rate of surgery indicates that too many procedures are being performed or that a comparatively low rate indicates that not enough surgery is being performed.[27] Indeed, Roos et al., in their study of surgical rates in Manitoba, challenge the assumption that high elective surgery rates indicate lowered standards of practice.[28] Others feel that one must not make implicit value judgments on the lower rates of surgical care in making policy decisions without careful study of the criteria used and variables examined.[29]

Evidence of Surplus Surgery

The situation has encouraged researchers to investigate the "appropriateness" of many surgical procedures and to provide information on the possibility that some "unnecessary" surgery is being performed. Research does suggest that some "unnecessary" surgery is being performed in certain subspecialties.[30,31,32,33,34,35,36,37,38,39,40] It has been estimated, for example, that at least one-third of the hysterectomies should not be performed,[41] and that two-thirds of the tonsillectomies performed are done so unnecessarily.[42]

The basic problem underlying the effort to document "unnecessary" surgery, however, is the absence of an accepted criteria for elective surgical procedures. Indeed, the indications for elective surgery are often imprecise and it is not unusual to find differences of professional judgment regarding the recommendation for surgery. While Fine and Morehead and others[43,44] have developed classification of inappropriate surgery, there still remains no generally acceptable means of assessing what percentage of operations performed are "necessary".

The issue was deemed sufficiently important for a Congressional subcommittee to hold special hearings. A Committee interim report issued in 1976 stated that "unnecessary" surgery exists in the U.S., has resulted in loss of life, and has cost the American public billions of dollars.[45] In 1979, for example, surgical costs alone were estimated to exceed $65 billion.

The rising costs of medical care in general and surgical care in particular have provided the impetus for the development of various cost containment programs. Programs such as rate regulation, capital expenditure regulation, and utilization review have been adopted to help reduce aggregate hospital expenditures. The contention is that if savings can be achieved in the hospital sector, a major step in controlling the rise in medical care costs would be realized.

Second Opinion Elective Surgery Programs

Given the increasing rate of surgery, its concomitant costs, and the real possibility that some surgical procedures probably have been performed without medical justification, it seems appropriate that a review of necessity of recommended elective surgery be encouraged before the operation is performed. In the past, tissue review committees, medical audits, and peer review mechanisms were implemented to quantify surgical necessity. Yet, these review processes are carried out after the operation has taken place. Other problems exist too: it is often difficult to judge the chart adequately because clear-cut indications for the procedure under investigation are often not established and it is often the case that the reviewer is not within the specialty of the procedure under review. One program, second opinion elective surgery program, is designed to screen patients before they undergo elective (non-emergency) surgery. It is hypothesized that a second opinion consultation can reduce the incidence of inappropriate surgery and its concomitant costs.

Summary

The fact that the rate of elective surgical procedures performed increased an unprecedented 31.5 percent from 1971 to 1978 is as puzzling as it is disturbing. Explanations for this dramatic increase have been suggested, but it is widely believed that many factors collectively are responsible for the phenomenon. It is believed that too many physicians are performing surgery, that the workloads of the surgeons are on the light side, that there are too many physicians in surgical residency programs, and that "unnecessary" surgery probably exists. These factors, among others, all serve to underscore the need to modify or to control the situation. Prospective review of surgical necessity, in the form of a second opinion consultation, is designed to provide patients initially recommended for an elective (non-emergency) surgical procedure with another opinion (consultation) before they decide to have the operation performed. Second opinion programs are hypothesized to reduce the incidence of inappropriate surgery and thereby stem the costs of such surgery.

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Chapter 2

Second Opinion Elective Surgery Programs

Introduction

The belief that the consumer can - and should - take an active, informed part in caring for his/her health and well-being is gaining greater acceptance. Indeed, the means of improving the quality of health care, and of reducing costs, are not restricted exclusively to the providers of medical care. The public, in general, has demanded more participation in health care decision making, has become more aware and better educated about alternatives to medical treatment, and has become more conscious of and more dissatisfied with the costs of health care. Second opinion programs could be considered, therefore, to be a logical expression of this new public awareness.

In a second opinion program, the consumer is given the opportunity to take an active, informed role in matters that traditionally have been left to the providers, and often were shrouded in professional mystique. While the concept of referrals to specialists is not new to medicine, what is different is that the consultation infrastructure is organized by those who are involved in the payment of medical services; i.e., unions, insurance companies, corporations, and recently, the government. Also, it is the consumer, not the provider, who initiates the consultation process once elective surgery is recommended.

Second Opinion Elective Surgery Programs: Background

Since the high cost of hospitalization and surgery is borne, in part, by employee health plans, usually in the form of higher insurance premiums based on the actual medical cost experience of the group, numerous health plans are trying to cope with the situation by establishing second opinion elective surgery programs. Such programs are designed to reduce the incidence of inappropriate surgery and thereby stem the costs of such surgery. Second opinion programs are designed to screen those elective operations which otherwise might be deferred or prevented without jeopardizing the general health and well being of the individual.* A comprehensive review of second opinion programs has been published by the Department of Surgical Practice of The American College of Surgeons.[1,2]

It should be stressed that the second opinion program is not designed to measure reliability between physicians nor is it designed to measure differences of opinion. The difficulties inherent in such studies have been well documented.[3,4,5,6] Second opinion programs are intended to help the patient make a more informed decision regarding previously recommended surgery.

The implementation of second opinion programs is a phenomenon of the 1970's. Although the first formal second opinion program was established in the early 1950's by the United Mine Workers' Fund, opposition of organized medicine in West Virginia, Pennsylvania, and Kentucky prevented the program from becoming fully operational.

The first program of any real consequence was started in New York City in 1972. At that time, the management trustees of two Taft-Hartley security welfare funds and State and Local government employee welfare funds asked the Cornell University School of Industrial and Labor Relations for assistance in developing health policy regarding a perceived medical care problem: the possibility of surplus surgery among the membership. The Department of Public Health at Cornell's Medical College - The New York Hospital helped the two funds establish second opinion programs.

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* Elective surgery is defined as operations or surgical procedures which are not considered to be emergency or life threatening and are subject to the choice or decision of the patient and physician. Specifically excluded are surgeries required as a result of trauma, normal vaginal deliveries, and elective abortions. Both inpatient and out patient surgery is included in the definition.

The rationale behind the program was twofold: financial and medical. The trustees hoped that savings from surgery foregone would enable the security welfare fund to offer new benefits such as drug or psychiatric programs to the membership. It also was hoped that the second opinion program would reduce the incidence of "unnecessary" surgery among the membership. It was maintained that the second opinion consultant could provide new or additional information which might preclude the need for surgery.

The Cornell - New York Hospital Second Opinion Program

There are two types of second opinion plans in the Cornell program: voluntary and mandatory. The former relies on the individual's initiative to take advantage of the program. It is estimated that only 2 to 5 percent of those recommended for elective surgery voluntarily seek a second opinion, and those who do usually are faced with major surgery. For a variety of reasons, these individuals may question the efficacy or the outcome of the surgery, or may have decided not to have surgery performed and are seeking reassurance that no surgery is the best course of action. Conversely, patients are likely not to get a second opinion when they see no reason to doubt the first physician's judgment.

In the mandatory plan there is no exercise of patient judgment; i.e., the patient is required to seek a consultation in order to have basic hospitalization and physician coverage for the elective procedure paid for by the welfare fund. This does not imply that individuals have to accept the consultant's recommendation in order to receive their benefits, however. In the mandatory programs roughly 85 percent of those recommended for surgery have a second opinion, hence a more accurate sampling of the population is seen. The mandatory program provides for one "foregiveness" for each member and dependent. That is, benefits will be paid if the surgery is performed without a consultation first being arranged; however, if the same individual undergoes surgery again and fails to first have a second opinion consultation, benefits will not be paid.* In both programs, however, the decision to have surgery is made by the individual.

Purpose of Study

The purpose of this study is to evaluate statistically the impact of presurgical screening on surgical utilization as well as on the costs and benefits of a mandatory second opinion program. Specifically the utilization phase of the study seeks to (1) document empirically the incidence of surgery among a randomly selected sample of those confirmed for elective surgery and all those not confirmed for elective surgery by means of a two year follow up telephone survey; (2) determine selected demographic and diagnostic characteristics associated with a second opinion consultation; and (3) determine if a statistical relationship exists among selected characteristics (demographic and educational) of the initial diagnosing physician and whether or not the need for surgery is confirmed by the second opinion consultant.

The cost-benefit analysis of the study seeks to measure the economic savings resulting from a reduction in the use of hospital and physicians' services. Specifically, the economic analysis will (1) include such general categories of medical services as physician services, diagnostic and laboratory tests, prescription drugs and prostheses, therapies and nursing hospital facilities, surgery and anesthesia; (2) determine the net direct and indirect economic cost of the second opinion program; and (3) include a discussion on the limitations of the data sources as well as on the generalizability of the results.

This report is divided into two parts: findings from the utilization phase of the study are presented in chapters 3 and 4 and findings from the economic analysis are presented in chapters 5 and 6.

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* The individual is warned in writing and in a telephone conversation that a second opinion consultation must be scheduled in the future.

Several specific research questions addressed in this study are:

- To what extent has the rate of surgery declined in the funds participating in the Cornell second opinion program?
- To what extent does the decline in the surgical rate differ between voluntary and mandatory second opinion programs?
- To what extent does the second opinion consultant's recommendation influence patient decision-making regarding the proposed surgery?
- To what extend does alternative medical treatment obviate the need for surgical intervention?
- To what extent is the mandatory second opinion program cost effective?

Because the second opinion program is a benefit offered by the sponsoring welfare fund, it was impossible to design a case-control evaluation study. Therefore, alternate methods of evaluation, which would produce valid results, were developed. Specifically, a quasi-experimental design was used. Such alternatives to true experimentation do pose problems in analysis and interpretation but they are recommended when nothing better is possible.[7] In this study, a single group before and after design was used. Status of an outcome variable (dependent variable; surgical utilization) is measured in a single group before and after the introduction of the program.

Study Population: Utilization Phase

The Cornell study population consists of several Taft Hartley welfare funds in the greater New York City area representing approximately 682,000 individuals (Appendix A). Taft Hartley Welfare and Pension Funds, created by the Taft-Hartley Act of 1948, are the principle mechanisms for private industry in the United States to cover all of their workers and dependents. Each Fund is equally represented by management and labor. Of the Funds participating in the Cornell second opinion program, the New York City Employees District Council 37 of the American Federation of State, County, and Municipal Workers (250,000 insured) was one of the first welfare plans to offer a voluntary second opinion benefit to its members and dependents. Since 1972, several other security welfare plans have instituted voluntary second opinion programs: Typo League Benefit Fund (20,000 insured); and the New York State and County Employees (Westchester, Nassau and Suffolk) (200,000 insured).

The Storeworkers' Welfare Fund (18,000 insured) was the first security welfare plan to provide a mandatory second opinion benefit for its members and dependents. Three other security plans have since instituted a mandatory program: New York City District Council of Carpenters Welfare Fund (60,000 insured); Local 32B-J of the Building Service Workers (120,000 insured); Local 814 of the Teamsters (12,000 insured); and the Jewelers Welfare Fund (1,800 insured). The Carpenters and Local 32B-J both initially offered a voluntary program but instituted a mandatory program after a two year trial period.

Each of the welfare funds that have participated or are participating in the Cornell program administer the program at their union or health welfare funds' headquarters. Trained intake workers, some of whom are registered nurses, determine patient eligibility, make the consultation appointments with panel surgeons provided by the Cornell research group, and process the forms. All analysis and evaluation take place at Cornell University Medical College. General intake procedures and policies are found in Appendix B and intake and consultant forms are found in Appendix C.

In both the voluntary and mandatory programs, the cost of the second opinion consultation ($50) and all ancillary tests required to complete the examination are paid for by the participating security welfare funds. A listing of those surgical procedures screened in the Cornell study is found in Appendix D.

Methodology of the Cornell Program: Utilization Phase

Fund members and their dependents who have been recommended for elective surgery (not necessarily by a surgeon) call their respective welfare fund's special second opinion telephone number to schedule a second opinion consultation. Members/dependents whose welfare fund offers a voluntary program have the option of seeking a second opinion consultation whereas those whose fund requires a second opinion must call to schedule an appointment. In both programs, the trained intake worker determines eligibility and schedules the consultation. The patient will usually select a consultant who is located near to his/her residence or place of work. The appointment is scheduled within 5 days of the initiating telephone call (most are scheduled within 2-3 days) thus minimizing the risk of jeopardizing the health of the patient.

The Cornell program has a 'closed' panel of surgical specialists. That is, only Board certified surgeons are invited to act as consultants. Resumes are reviewed by the Cornell research group and if the specialist is accepted, he/she is placed on the panel list. Although Board certification is the most important criterion, specialty, hospital affiliation, and training are important variables too. The panel list is disseminated to each of the participating welfare funds and it is updated quarterly. There are presently over 600 Board certified surgeons representing all the major subspecialties on the Cornell panel.

The consultant examines the patient and either confirms or does not confirm the recommendation for surgery. In accordance with the working definitions of the program, a patient is confirmed for surgery by the second opinion consultant if, after examination, the surgeon finds that surgery is warranted and appropriate and that the operation is in the best interest of the patient.

The consultant must have no doubt that surgery should be performed. Conversely, the second opinion consultant may find, after examination of the patient, that surgery is not the most appropriate therapeutic next step. There may be no pathologic justification for surgery, or the surgeon may believe that medical treatment, not surgery, should be tried. The consultant may find that the initial diagnosing physician's diagnosis is incorrect, thus precluding the need for surgery. In short, the consultant may believe that surgery is not warranted and appropriate and should not be performed. The recommendation of medical treatment and/or frequent examinations does not preclude the possibility of surgery's being performed at a future date.

The decision to undergo surgery rests with the individual regardless of the consultant's recommendation. A third opinion could be arranged if so requested. The funds will pay for the hospitalization and surgery should the patient decide to have the operation regardless of the consultant's recommendation; however, the consultant is not permitted to perform the surgery. This safeguard prevents potential abuses of the program and helps to reassure the patient that a recommendation of surgery is made in his or her best interest.

Summary

The objectives of second opinion programs (voluntary and mandatory) are fairly straightforward. For those who have been recommended for elective, non-emergency surgery, a second opinion consultation often can help the patient make a more informed decision regarding the proposed surgery. Oftentimes, an independent second professional opinion will enable the patient to decide whether to undergo or forego surgery. There is no out-of-pocket expenditure by the patient, as the sponsoring organization pays for the full costs of the consultation and any ancillary tests requested by the consultant. Most sponsoring organizations will pay for a third opinion, or "tie breaker", should the patient so request.

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Chapter 3

Empirical Findings - Utilization Phase

Research papers based on findings from the Cornell study had been published previously.[1-6] The following analysis is based on data compiled from the program's inception (February, 1972) through April, 1980.* The total study population as of April, 1980 numbers 11,878 (5079 within the voluntary group and 6799 within the mandatory group). That is, roughly 12,000 individuals have received a second opinion consultation.

Demographic Profile of the Study Population

An intake form (see Appendix C) is completed by the Fund intake officer for each individual who is eligible for a second opinion consultation. Demographic information as well as the patient's initial diagnosing physician's specialty/Board status and the consultant's specialty are recorded. In addition, the consultant's recommendation (confirmed for surgery or not confirmed for surgery) is listed on an accompanying form (see Appendix C). These data provide the basis for statistical analysis of the study population as well as present a statistical profile of the initial diagnosing physician.

Table 3 shows that within both the voluntary and mandatory groups, the majority of the participants were females (61.4% and 55.7%, respectively). The majority were between the ages of 45 to 64 years. Table 4 shows that roughly half of the sample in both the voluntary and mandatory groups were middle aged; between 45-64 years (54.0% and 51.3%, respectively), and one-

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* At the time of writing this report, data which had been coded, keypunched, and entered on to the Master computer file as of April, 1980, represented the most up-to-date information. Since the Cornell-New York Hospital second opinion study is prospective, we arbitrarily used April 1980 as a cut-off date to analyze the utilization data. Follow up data, however, are processed more rapidly hence the cut-off date for analysis of the four follow up surveys was June, 1980.

TABLE 3

Sex Distribution of Study Population By Voluntary and Mandatory Groups, February, 1972 - April, 1980

Sex	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Male	1963	38.6	3010	44.3	4973	41.9
Female	3116	61.4	3789	55.7	6905	58.1
Total	5079	100.0	6799	100.0	11878	100.0

TABLE 4

Age Distribution of Study Population
By Voluntary and Mandatory Groups,
February, 1972 - April, 1980

Age Grouping	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
< 5 yrs	82	1.6	164	2.4	246	2.1
5 - 14 yrs	181	3.6	368	5.4	549	4.6
15 - 24 yrs	277	5.5	556	8.2	833	7.0
25 - 44 yrs	1290	25.5	1980	29.2	3270	27.6
45 - 64 yrs	2728	54.0	3476	51.3	6204	52.4
≥ 65 yrs	496	9.8	235	3.5	731	6.2
Total	5054*	100.0	6779**	100.0	11833***	99.9

* age unknown for 25 individuals

** age unknown for 20 individuals

*** age unknown for 45 individuals

quarter were between the ages of 25 to 44 years (25.5% and 29.2%, respectively). Less than 10 percent within both groups were children (14 years and younger) or elderly (65 years and older). The study population in both the voluntary and mandatory groups was fairly evenly distributed among the boroughs of New York City and its surrounding suburban counties. Table 5 shows the geographic distribution of the study population. Richmond County (Staten Island) is the least populated borough and, not surprisingly, very few of the study participants reside in that area.

Table 6 shows the distribution of the 30 diagnostic categories screened in the Cornell second opinion program. Within the voluntary group, 12.5 percent of the participants had a second opinion for potential surgery for removal of a mass, cyst, or lesion and 11.9 percent had a second opinion for potential surgery classified as 'all other'. Hysterectomy (radical, not radical, and total) was the next most frequently screened procedure in the voluntary group (10.7%). Within the mandatory group, 12.0 percent of the participants had a second opinion for potential surgery classified as 'all other' while 10.8 percent had a second opinion for potential surgery for removal of a mass, cyst, or lesion. Hernia repair and dilatation and curettage were the next most frequently screened procedures in the mandatory group (8.8% and 6.8%, respectively).

Confirmed/Not Confirmed Status

Table 7 shows the distribution of those confirmed for surgery and those not confirmed for surgery in the voluntary and mandatory groups. Those confirmed for surgery represent individuals for whom the second opinion consultant agrees that surgery is the next most appropriate treatment modality. Conversely, of those not confirmed for surgery, the consultant felt that surgery was not in the patient's best interest. Patients, for example, were recommended to try alternate treatment modalities rather than have the opera-

TABLE 5

Geographic Distribution of Study Population By Voluntary and Mandatory Groups, February, 1972 - April, 1980

Geographic Location	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Manhattan	570	11.2	1406	21.0	1976	16.8
Brooklyn	1426	28.1	1398	20.9	2824	24.0
Bronx	712	14.0	923	13.8	1635	13.9
Queens	1163	22.9	1777	26.5	2940	25.0
Richmond	128	2.5	102	1.5	230	2.0
Surrounding Suburban Counties	1079	21.1	1093	16.3	2172	18.4
Total	5078*	100.0	6699**	100.0	11777+	100.1

* residence unknown for 1 individual

** residence unknown for 100 individuals

+ residence unknown for 101 individuals

TABLE 6

Distribution of Diagnostic Categories of Study Population

By Voluntary and Mandatory Groups,

February, 1972 - April, 1980

Diagnostic Category	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Bunionectomy	47	0.9	147	2.2	194	1.6
Cholecystectomy	215	4.2	270	4.0	485	4.1
Dilatation & Curettage	144	2.8	465	6.8	609	5.1
Deviated Septum	94	1.9	185	2.7	279	2.3
Ear Surgery	142	2.8	195	2.9	337	2.8
Excision of Intervertebral Disc	20	0.4	9	0.1	29	0.2
G.I. (upper & lower)	62	1.2	56	0.8	118	1.0
Hand Surgery	135	2.7	112	1.6	247	2.1
Heart Surgery	112	2.2	56	0.8	168	1.4
Hemorrhoidectomy	70	1.4	137	2.0	207	1.7
Hernia Repair	302	5.9	599	8.8	901	7.6
Hip Surgery	70	1.4	39	0.6	109	0.9
Hysterectomy	545	10.7	397	5.8	942	7.9
Incision, excision for Mass, Cyst, Lesion of Skin	141	2.8	355	5.2	496	4.2
Knee Surgery	190	3.7	124	1.8	314	2.6
Mastectomy & Other Operations of Breast	299	5.9	353	5.2	652	5.5
Operations on Bladder	106	2.1	101	1.5	207	1.7
Operations on Kidney	33	0.6	39	0.6	72	0.6
Operations on Masses, Cysts, Lesions	635	12.5	734	10.8	1369	11.5
Other Operations on Bones & Joints	48	0.9	70	1.0	118	1.0
Other Operations on Eyes	177	3.5	345	5.1	522	4.4
Other Operations on Fascia, Tendons & Muscles	14	0.3	23	0.3	37	0.3
Other Operations on Feet	170	3.4	218	3.2	388	3.3
Other Operations on Vertebral Column	87	1.7	20	0.3	107	0.9
Prostatectomy	161	3.2	90	1.3	251	2.1
Removal of Cataract	209	4.1	270	4.0	479	4.0
Thyroidectomy	27	0.5	42	0.6	69	0.6
Tonsillectomy and/or Adenoidectomy	117	2.3	315	4.6	432	3.6
Varicose Vein Excision and Ligation	104	2.1	215	3.2	319	2.7
ALL OTHER	603	11.9	818	12.0	1421	12.0
TOTAL	5079	100.0	6799	99.8	11878	99.7

TABLE 7

Confirmed/Not Confirmed Status of Study Population

By Voluntary and Mandatory Groups,

February, 1972 - April, 1980

	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Confirmed for Surgery	3382	66.6	5528	81.3	8910	75.0
Not Confirmed for Surgery	1697	33.4	1271	18.7	2968	25.0
Total	5079	100.0	6799	100.0	11878	100.0

The sample size for both the voluntary and mandatory groups is more than sufficient to assert with 95 percent statistical confidence that the proportion of patients observed who are not confirmed for elective surgery is within 5 percent of the true proportion of such patients.

tion performed. A trial of physical therapy or use of corrective footwear was thought preferable to surgery among many who were not confirmed for initially recommended orthopedic surgery. Frequent pap smears and/or examinations was thought preferable to surgery among many who were not confirmed for initially recommended gynecologic surgery. Many patients were told by the consultant that their symptoms were not severe enough to warrant surgery while others were told that there was no pathological justification for surgery. Such patients are classified as not confirmed for surgery cases. Roughly one third of those in the former group and 18.7 percent within the latter group were not confirmed for surgery by the second opinion consultant. These percentages have not deviated significantly over time; i.e., they have remained fairly constant over the years of the program's existence.

Table 8 shows the distribution of those not confirmed for surgery analyzed by age grouping of the study population. Within the voluntary group, within each age grouping, roughly one-quarter to one-third were not confirmed for surgery. Of those aged 25 to 44, however, a slightly higher percentage (37.2%) were not confirmed for surgery. Within the mandatory group, with the exception of those aged 25 to 44, less than one-fifth within each age grouping were not confirmed for surgery. Roughly 22 percent of those aged 25 to 44 were not confirmed for surgery.

Table 9 shows the breakdown of those not confirmed for surgery analyzed by selected diagnostic categories. Within the voluntary group, half of those initially recommended for knee surgery were not confirmed for the surgery and 46.8% of those recommended for a bunionectomy were not confirmed for that operation. Roughly 41 percent of those recommended for a hysterectomy and a prostatectomy, respectively, were not confirmed by the second opinion consultant. Within the mandatory group, roughly 33 percent of those initially

TABLE 8

Age Distribution of Those Not Confirmed for Surgery By Voluntary and Mandatory Groups, February, 1972 - April, 1980

Age Grouping	Voluntary			Mandatory		
	Total	Not Confirmed		Total	Not Confirmed	
	N	N	%	N	N	%
< 5 yrs	82	21	25.6	164	20	12.2
5 - 14 yrs	181	64	35.4	368	57	15.5
15 - 24 yrs	277	96	34.7	556	98	17.6
25 - 44 yrs	1290	480	37.2	1980	433	21.9
45 - 64 yrs	2728	885	32.4	3476	616	17.7
≥ 65 yrs	496	139	28.0	235	42	17.8
Total	5054*	1685**	33.3	6779***	1266****	18.7

* age unknown for 25 individuals

** age unknown for 12 not confirmed cases

*** age unknown for 20 individuals

**** age unknown for 5 not confirmed cases

TABLE 9

Selected Diagnostic Categories of Those Not Confirmed for Surgery

By Voluntary and Mandatory Groups,

February, 1972 - April, 1980

Selected Diagnostic Categories	Voluntary			Mandatory		
	Total	Not Confirmed		Total	Not Confirmed	
	N	N	%	N	N	%
Bunionectomy	47	22	46.8	147	48	32.7
Cholecystectomy	215	25	11.6	270	22	8.1
Dilatation and Curettage	144	45	31.3	465	82	17.6
Deviated Septum	94	32	34.0	185	47	25.4
Hernia Repair	302	44	14.6	599	35	5.8
Hysterectomy	545	225	41.3	397	122	30.7
Knee Surgery	190	97	51.1	124	29	23.4
Mastectomy & Other Operations of Breast	299	84	28.1	353	61	17.3
Prostatectomy	161	66	41.0	90	26	28.9
Removal of Cataract	209	63	30.1	270	41	15.2
Tonsillectomy and/or Adenoidectomy	117	35	29.9	315	32	10.2
Varicose Vein Excision & Ligation	104	34	32.7	215	28	13.0
Total	2427	772	31.8	3430	573	16.7

We can almost assert with 90 percent confidence that the proportion of patients observed who were not confirmed for hysterectomy is within 5 percent of the true proportion of such patients. We can assert with 90 percent confidence that the proportion of patients observed who were not confirmed for prostatectomy is within 10 percent of the true proportion of such patients. We do not have an adequate sample size in the voluntary program to permit similar statistical statements to be made.

We can assert with 90 percent confidence that the proportion of patients observed who were not confirmed for hysterectomy is within 10 percent of the true population of such patients. We do not have an adequate sample size in the other diagnostic categories listed in the mandatory program to permit similar statistical statements to be made.

recommended for a bunionectomy were not confirmed for the surgery. One third (30.7%) were not confirmed for a hysterectomy and 28.9 percent of those recommended for a prostatectomy were not confirmed for the surgery.

Table 10 shows the distribution of those not confirmed for surgery analyzed by the Board status of the initial diagnosing physician. Within the voluntary group, forty one percent of the Boarded orthopedists and 38.3 percent of the Boarded gynecologists had their recommendation for surgery not confirmed by the respective Boarded consultants. Those Boarded in Surgery and in Internal Medicine had the lowest rates of non-confirmation (22.1% and 23.4%, respectively).

When all of the Boarded initial diagnosing physicians were grouped, 31 percent had their recommendation for surgery not confirmed compared with 35.8 percent of their non-Boarded counterparts.

Within the mandatory group, those initial diagnosing physicians Boarded in gynecology had the highest rate of non-confirmation (23.8%) while those who were not Boarded had a non-confirmation rate of 21.4 percent. Those Boarded in Surgery had the lowest rate of non-confirmation (10.2%).

When all of the Boarded initial diagnosing physicians were grouped, the non-confirmation rate was 15.7 percent compared with 21.4 percent of the non-Boarded group.

There was a non-significant difference ($p > 0.2$) between those Boarded and those not Boarded within the voluntary and mandatory groups. That is, Chi Square statistic showed that there was no statistically significant difference in non-confirmation rates made by those initial diagnosing physicians who were Board certified and those who were not Boarded. Moreover, when Chi Square analysis was calculated for those initial diagnosing physicians who were Board certified in a surgical specialty, for those who were Board certified Internists, and for those who were not Board certified, there was a

TABLE 10

Initial Diagnosing Physician's Board Status of Those Not Confirmed for Surgery by Voluntary and Mandatory Groups, February, 1972 - April,1980

Board Status	Voluntary			Mandatory		
	Total	Not Confirmed		Total	Not Confirmed	
	N	N	%	N	N	%
D-Ophthalmology	224	65	29.0	332	55	16.6
D-Obstetrics & Gynecology	522	200	38.3	692	165	23.8
D-Otolaryngology	255	75	29.4	441	74	16.8
D-Orthopedics	349	144	41.3	309	44	14.2
D-Surgery	598	132	22.1	1148	117	10.2
D-Urology	174	61	35.1	245	30	12.2
D-Thoracic Surgery*	46	16	34.8	25	1	4.0
D-Plastic Surgery*	23	7	30.4	24	6	25.0
D-Neurosurgery*	20	9	45.0	10	5	50.0
D-Internal Medicine	214	50	23.4	161	29	18.0
D-Other	114	32	28.1	159	30	18.9
Not Boarded	954	342	35.8	1199	256	21.4
Unknown**	1336	469	35.1	1691	377	22.3

* Numbers too small to permit meaningful analysis.

** Either not listed in the Medical Directories or insufficient information was provided by patient.

non-significant difference ($p > 0.2$) within the voluntary and mandatory groups. These findings show that the difference in non-confirmation rates is non-significant among the groups and is not more than one might expect to occur by chance.

Table 11 shows the breakdown of those not confirmed for surgery analyzed by the second opinion consultant's specialty. Within the voluntary group, 46.3 percent of the Boarded orthopedists and 40.0 percent of the Boarded gynecologists did not confirm the initially recommended surgery. Within the mandatory group, those Boarded in orthopedics and gynecology were the two groups which did not confirm the need for the previously recommended surgery most frequently (32.9% and 26.4%, respectively). Within both the voluntary and mandatory groups, those consultants Board certified in General Surgery showed the lowest non-confirmation rates (23.3% and 11.1%, respectively).

Summary

A total of 11,878 individuals received a second opinion consultation from the program's inception (February, 1972) through April, 1980 (5079 within the voluntary group and 6799 within the mandatory group). There were more females than males in the study population within both the voluntary and mandatory groups and the majority within both groups were between the ages of 45-64 years. Within the voluntary groups, roughly 12 percent, respectively, of the participants had a second opinion for potential surgery for removal of a mass, cyst, or lesion and for operations classified as 'all other'. Within the mandatory group, 12 percent received a second opinion for potential surgery classified as 'all other' and almost 11 percent for removal of a mass, cyst or lesion.

Approximately one third within the voluntary group and 18.7 percent within the mandatory group were not confirmed for initially recommended surgery. These percentages have not deviated significantly over the years of the pro-

TABLE 11

Consultant's Surgical Specialty of Those Not Confirmed for Surgery by Voluntary and Mandatory Groups, February, 1972 - April, 1980

Specialty	Voluntary			Mandatory		
	Total	Not Confirmed		Total	Not Confirmed	
	N	N	%	N	N	%
General Surgery	1517	353	23.3	2477	274	11.1
Gynecology	991	396	40.0	1256	332	26.4
Ophthalmology	391	124	31.7	639	127	19.9
Orthopedics	795	368	46.3	788	259	32.9
Otolaryngology	553	162	29.3	920	152	16.5
Urology	372	132	35.5	425	81	19.1

gram's existence. Within the voluntary group, over half of those initially recommended for knee surgery and 46.8 percent initially recommended for a bunionectomy were not confirmed for surgery by the second opinion consultant. Within the mandatory group, 32.7 percent initially recommended for a bunionectomy and 30.7 percent initially recommended for a hysterectomy were not confirmed for surgery by the second opinion consultant.

Within the voluntary group, 41 percent of the initial diagnosing physicians who were Boarded orthopedists and 38.3 percent who were Boarded gynecologists had their recommendation for surgery not confirmed by the respective Boarded consultants. Within the mandatory group, those initial diagnosing physicians Boarded in gynecology and those not Boarded had the highest rates of non-confirmation by the respective consultants (23.8% and 21.4%, respectively). Those Boarded in Surgery within both the voluntary and mandatory groups had the lowest rates of non-confirmation (22.1% and 10.2%, respectively). There was a statistically non-significant difference ($p > 0.2$) between those initial diagnosing physicians who were Boarded and those who were not Boarded within the voluntary and mandatory groups.

Within both the voluntary and mandatory groups, consultants Boarded in orthopedics and gynecology were the two groups which did not confirm the need for previously recommended surgery most frequently. Those consultants Boarded in General Surgery showed the lowest non-confirmation rates.

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Chapter 4

Empirical Findings of the Follow Up Evaluation: Utilization Phase

Surgical and Medical Treatment Status

In order to ascertain how many of individuals who sought a second opinion decided to undergo/forego surgery, a two year follow up evaluation was instituted. All not confirmed for surgery cases and an equal number of randomly selected sample of confirmed for surgery cases were followed for two years from the date of their second opinion consultation. Four telephone interviews, voluntarily completed by the respondent, were administered at six month intervals. Exhibit 1 shows the stages of the follow up phase of the second opinion program. The survey instruments are included in Appendix E.

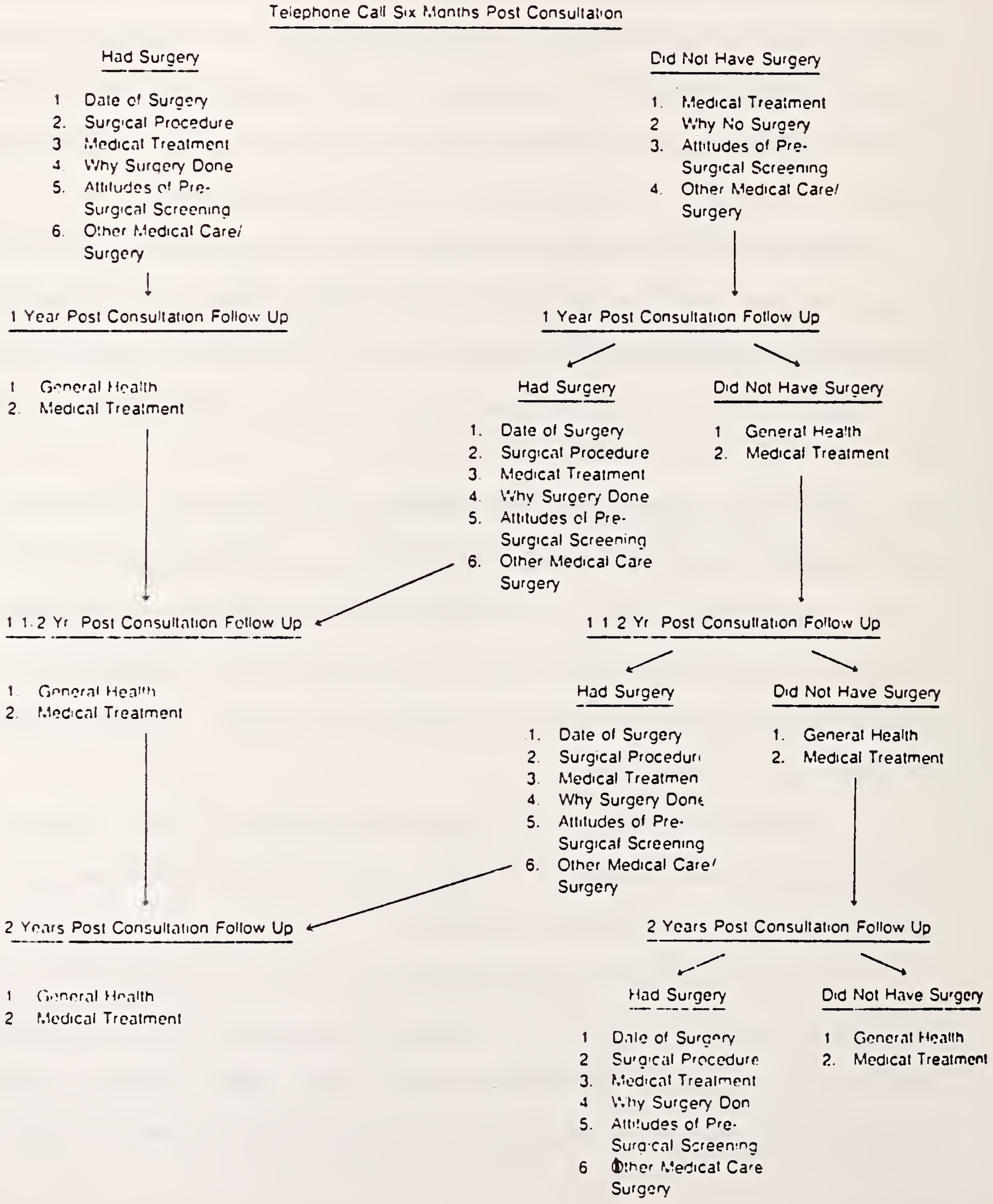
The initial questionnaire for those who reported that they had the surgery performed elicited information on why the operation was not performed Subsequent calls inquired about general health, whether the surgery had been performed since the last interview, and the nature and type of medical treatment.

Regardless of the individual's surgical status, however, if the respondent reported that he/she did not receive any medical treatment (for the condition which precipitated a second opinion consultation) for two consecutive six month follow up periods, he/she is considered to be asymptomatic and is no longer followed in the evaluation phase of the study. Medical treatment is defined as follows:

1. if the individual sees a doctor in the office or in a clinic and is administered any medication, therapy, cast or brace, or has any tests performed, medical treatment was received.

2. if the individual has had surgery and saw the doctor in the office or in a clinic more than once for a physical examination only, provided that the visits continue for more than one month (four weeks) following the consultation or release from the hospital, medical treatment was received.

Exhibit 1.: Follow Up Survey Flow Chart, Cornell Second Opinion Elective Surgery Program.



First Follow Up Evaluation: Table 12 shows the distribution of individuals scheduled to be contacted for their first follow up telephone interview (six months from the date of their consultation). Within the voluntary group, of those confirmed for surgery, we successfully contacted 95.2 percent of the total to be called (less the refused to answer, deceased and pending cases). Among the not confirmed for surgery cases, the response rate was 89.4 percent. Within the mandatory group, of those confirmed for surgery, we contacted 95.2 percent of the total to be called and among the not confirmed for surgery, the response rate was 85.6 percent. Since the Cornell-New York Hospital is a prospective study, we arbitrarily used April, 1980 as a cut-off date; however, some individuals who sought a second opinion were not able to be contacted on schedule and these cases are classified as pending. Some of these individuals may have been on vacation, on sick leave or unable to respond to the questionnaire when called. Continued efforts will be made to contact these cases.

Table 13 shows the distribution of surgical status analyzed by confirmed for surgery and not confirmed for surgery status. Within the voluntary group, 70.3 percent of those confirmed for surgery reported that they had had the operation performed. Conversely, 82.8 percent of those not confirmed for surgery reported that they had not had surgery performed. Within the mandatory group, 85.8 percent of those confirmed for surgery had the operation performed whereas 67.5 percent of those not confirmed for surgery reported that they had not had the operation performed.

Regardless of the confirmed or not confirmed status, of those who did elect to have the operation, the overwhelming majority within both the voluntary and mandatory groups had the surgery performed within 90 days from the date of their consultation (84.0% and 88.6%, respectively). For both the voluntary and mandatory groups, we can assert with 95 percent confidence that

TABLE 12

Individuals Scheduled to Receive a First Follow Up Interview

February, 1972 - April, 1980

	Voluntary				Mandatory			
	Confirmed		Not Confirmed		Confirmed		Not Confirmed	
	N	%	N	%	N	%	N	%
# Called	1448	92.8	1410	83.1	1083	93.1	1012	79.6
# Unable to Reach	73	4.7	168	9.9	55	4.7	170	13.4
# Refused to Answer	29	1.9	11	0.6	23	2.0	23	1.8
# Deceased	10	0.6	28	1.6	2	0.2	3	0.2
# Pending 1st Follow Up Interview	0	0	80	4.7	0	0	63	5.0
Total # To Be Called	1560	100.0	1697	99.9	1163	100.0	1271	100.0
% called of Total To Be Called less Refused To Answer, Deceased and Pending Cases		95.2		89.4		95.2		85.6

TABLE 13

First Follow Up Data; Surgical Status Analyzed by Confirmed/Not Confirmed

Status by Voluntary and Mandatory Groups

February, 1972 - April, 1980

	Voluntary				Mandatory				Total			
	Confirmed		Not Confirmed		Confirmed		Not Confirmed		Confirmed		Not Confirmed	
	N	%	N	%	N	%	N	%	N	%	N	%
Surgery Performed	1018	70.3	242	17.2	929	85.8	329	32.5	1947	76.9	571	23.6
Surgery Not Performed	430	29.7	1168	82.8	154	14.2	683	67.5	584	23.1	1851	76.4
Total	1448	100.0	1410	100.0	1083	100.0	1012	100.0	2531	100.0	2422	100.0

We can assert with 95 percent confidence that the proportion of patients observed who were confirmed for surgery who elected to have the operation performed is within 5 percent of the true proportion of such patients.

We can assert with 95 percent confidence that within both the voluntary and mandatory groups, the proportion of patients observed who were not confirmed for surgery who have not had surgery performed is within 5 percent of the true proportion of such patients.

the proportion of patients observed who have elective surgery performed within 90 days despite a negative second opinion is within 5 percent of the true proportion of such patients. Within the voluntary group, 1.1 percent had surgery performed on an outpatient basis and 1.6 percent within the mandatory group had the procedure performed on an ambulatory basis.

Although the majority within both the voluntary and the mandatory groups did have the surgery performed, almost one-third within the voluntary group and 14.2 percent within the mandatory group had not had the operation performed six months from the date of their consultation.

Table 14 shows the breakdown of those not confirmed for surgery who have not had surgery performed analyzed by selected diagnostic categories. Within the voluntary group, the majority within each diagnostic category listed had not had the surgery performed. Within the mandatory group, the majority of those not confirmed for the listed procedures had not had the operation with the exception of those initially not confirmed for hysterectomy. The majority of women evidently decided to have the operation (the patient's prerogative).

Table 15 shows the breakdown of this confirmed for surgery, no surgery performed group analyzed by selected diagnostic categories. Within the voluntary group, of those confirmed for other foot surgery and prostate surgery, 45 percent and 43.8 percent, respectively, had not had the surgery performed. Thirty five percent of those confirmed for knee surgery had not had the operation performed. Within the mandatory group, the numbers are too small to permit meaningful analysis.

Table 16 shows the distribution of those not confirmed for surgery who haven't had the operation performed analyzed by reasons for not having the operation. Within both the voluntary and mandatory groups, the overwhelming majority decided against having the operation because they were following the advice of the consultant. Of those who were not confirmed for surgery

TABLE 14

First Follow Up Data: Individuals Not Confirmed for Surgery Who Have Not Had Surgery Performed by Selected Diagnostic Category, February, 1972 - April, 1980

Selected Diagnostic Categories	Surgery Not Performed					
	Voluntary			Mandatory		
	Total Not Conf.	Total NCNS*	%	Total Not Conf.	Total NCNS*	%
Breast Surgery	71	61	85.9	49	40	81.6
Cataract	53	43	81.1	34	22	64.7
Hernia Repair	39	33	84.6	30	20	66.7
Hysterectomy	183	139	76.0	95	45	47.4
Knee Surgery	86	71	82.6	24	22	91.7
Other Foot Surgery	74	69	93.2	80	56	70.0
Prostate	59	47	79.7	26	16	61.5

*NCNS - Not Confirmed, No Surgery

TABLE 15

First Follow Up Data: Individuals Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Selected Diagnostic Category, February, 1972 - April, 1980

Selected Diagnostic Categories	Surgery Not Performed					
	Voluntary			Mandatory		
	Total Conf.	Total CNS*	%	Total Conf.	Total CNS*	%
Breast Surgery	97	19	19.6	55	9	16.4
Cataract	69	23	33.3	45	4	8.9
Hernia Repair	113	24	21.2	127	15	11.8
Hysterectomy	125	26	20.8	58	7	12.1
Knee Surgery	37	13	35.1	21	0	0
Other Foot Surgery	40	18	45.0	15	4	26.7
Prostate	48	21	43.8	12	2	16.7

*CNS - Confirmed, No Surgery

TABLE 16

First Follow Up Data: Individuals Not Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Reasons for Having No Surgery, February, 1972 - April, 1980

	Surgery Not Performed					
Reasons	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Surgery can be postponed (patient judgment)	69	6.6	72	10.9	141	8.3
Surgery too risky (patient judgment)	23	2.2	3	0.5	26	1.5
Patient fears surgery	26	2.5	17	2.6	43	2.5
Symptoms disappeared (patient judgment)	19	1.8	28	4.2	47	2.8
Condition tolerable	24	2.3	25	3.8	49	2.9
Followed advice of Consultant	861	82.9	498	75.3	1359	80.0
Followed advice of other Doctor	16	1.6	18	2.8	34	2.0
Total	1038*	99.9	661**	100.1	1699t	100.0

*130 individuals did not answer the question

** 22 individuals did not answer the question

t 152 individuals did not answer the question

who had the surgery performed, the overwhelming majority decided to have the operation because the patient felt that his/her condition was getting worse. Table 16 shows the distribution of reasons for having surgery among this group. Those who said that they were following the advice of another doctor were not referring to either the initial diagnosing physician or the second opinion consultant.

Table 17 shows the distribution of those who were confirmed for surgery who had not had the surgery performed analyzed by reasons for not having the surgery. The plurality within both the voluntary and mandatory groups felt that the surgery could be postponed (patient judgment) - (39.4% and 39.9%, respectively). Roughly 13 percent within both groups felt that their condition was tolerable. Those who said that they were following the advice of the consultant must have misunderstood the surgeon's recommendation. It could be that the consultant said that surgery could be performed if the patient wanted and the patient chose to interpret this recommendation to mean that surgery need not be performed.

Table 18 shows the distribution of those who were not confirmed for surgery who elected to have the surgery. Within both the voluntary and mandatory groups, the overwhelming majority said that they decided to have the operation performed because their symptoms or condition was getting worse (patient judgment). In many instances the patients reported that their condition was too painful to live with. The majority of these individuals had the operation performed within 90 days from the date of their consultation. That is, there was not a long period of deliberation. When surgery was performed, it was performed soon after the second opinion consultation.

Among those confirmed for surgery who elected to have the operation performed, the surgery was performed within 90 days from the date of their consultation in the majority of cases. Evidently, confirmation or non-

TABLE 17

First Follow Up Data: Individuals Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Reasons for Having No Surgery, February, 1972 - April, 1980

	Surgery Not Performed					
Reasons	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Surgery can be postponed (patient judgment)	160	39.4	59	39.9	219	39.5
Surgery too risky (patient judgment)	27	6.7	7	4.7	34	6.1
Patient fears surgery	45	11.1	11	7.4	56	10.1
Symptoms disappeared (patient judgment)	23	5.7	12	8.1	35	6.3
Condition tolerable	53	13.1	17	11.5	70	12.6
Consultant advised no surgery*	26	6.4	20	13.5	46	8.3
Followed advice of other Doctor	72	17.7	22	14.9	94	17.0
Total	406**	100.0	148'	100.0	554[t]	99.9

*As reported by the patient

** 24 individuals did not answer the question

' 6 individuals did not answer the question

[t] 30 individuals did not answer the question

TABLE 18

First Follow Up Data: Individuals Not Confirmed for Surgery Who Had Surgery Performed Analyzed by Reasons for Having Surgery, February, 1972 - April, 1980

	Surgery Performed					
Reasons	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Symptoms persisted or became worse (patient judgment)	172	78.5	246	80.1	418	79.5
Followed other Doctor's advice	37	16.9	36	11.7	73	13.9
Followed Consultant's advice	5	2.3	13	4.2	18	3.4
Other	5	2.3	12	3.9	17	3.2
Total	219*	100.0	307**	99.9	526[t]	100.0

* 23 individuals did not answer the question

** 22 individuals did not answer the question

t 45 individuals did not answer the question

confirmation status had little influence on when surgery was performed among those who elected to have surgery. The findings show that in both groups the majority who had surgery did so very soon after their consultation.

Table 19 shows the breakdown of reasons for having surgery among those confirmed for surgery by the second opinion consultant who elected to have the operation performed. Within the voluntary group, the majority (64.4%) said that they were following the consultant's advice. Within the mandatory group, the majority (65.0%) stated that they had the operation because their condition was getting worse (patient judgment). Roughly 34 percent said that they were following the consultant's advice.

Table 20 shows the distribution of those not confirmed for surgery who have not had surgery performed analyzed by type of medical treatment received. Since each patient may have received more than one type of medical treatment, the numbers appear to be inflated. Within the voluntary group, the plurality (46.9%) reported receiving no medical treatment, 24.7 percent reported receiving periodic examination(s), and 15.5 percent were taking medication. Within the mandatory group, over half (53.4%) reported receiving no medical treatment for their condition while one-quarter (25.7%) reported seeing their doctor for periodic examination(s).

Table 21 shows the distribution of those confirmed for surgery who had not had surgery performed analyzed by medical treatment status. Within the voluntary group, over half (51.8%) reported receiving no medical treatment for their condition while 22.7 percent reported seeing their doctor for periodic medical examination(s). Within the mandatory group, over half (57.1%) reported receiving no medical treatment and 24.6 percent reported receiving periodic medical examination(s).

Second Follow Up Evaluation: All respondents who had the first follow up interview are recontacted six months later; i.e., one year from the date of

TABLE 19

First Follow Up Data: Individuals Confirmed for Surgery Who Have Had Surgery Performed Analyzed by Reasons for Having Surgery

February, 1972 - April, 1980

	Surgery Performed					
Reasons	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Symptoms persisted or became worse (patient judgment)	313	33.5	585	65.0	898	48.9
Followed other Doctor's advice	16	1.7	9	1.0	25	1.4
Consultant advised no surgery*	602	64.4	305	33.9	907	49.4
Other	4	0.4	1	0.1	5	0.3
Total	935**	100.0	900††	100.0	1835t	100.0

*As reported by the patient

** 83 individuals did not answer the question

' 29 individuals did not answer the question

t 112 individuals did not answer the question

TABLE 20

First Follow Up Data: Individuals Not Confirmed for Surgery
Who Have Not Had Surgery Performed Analyzed by Type of
Medical Treatment Received,
February, 1972 - April, 1980

Type of Medical Treatment	Surgery Not Performed					
	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Examination	346	24.7	203	25.7	549	25.0
Medication	217	15.5	96	12.2	313	14.3
Physical Therapy	39	2.8	8	1.0	47	2.1
Cast/Brace	30	2.1	6	0.8	36	1.6
Other	113	8.1	55	7.0	168	7.7
No Treatment	658	46.9	422	53.4	1080	49.2
Total	1403	100.1	790	100.1	2193	99.9

TABLE 21

First Follow Up Data: Individuals Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Type of Medical Treatment Received, February, 1972 - April, 1980

Type of Medical Treatment	Surgery Not Performed					
	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Examination	113	22.7	43	24.6	156	23.2
Medication	71	14.3	19	10.9	90	13.4
Physical Therapy	6	1.2	0	0	6	0.9
Cast/Brace	7	1.4	0	0	7	1.0
Other	43	8.6	13	7.4	56	8.3
No Treatment	258	51.8	100	57.1	358	53.2
Total	498	100.0	175	100.0	673	100.0

their second opinion consultation. The questions asked at this time elicit information on surgical status; why surgery had not been performed (if the operation had not been performed); why surgery was performed (if the operation was performed since the first follow up interview); and medical treatment status. Since we had direct control of the keypunching of the second, third and fourth follow up coding sheets, the cut-off date for data to be analyzed for these surveys was June, 1980.

Table 22 shows the distribution of individuals scheduled to have a second follow up telephone interview. Within the voluntary group, of those confirmed for surgery, we contacted 89.1 percent of the total number of individuals scheduled to be contacted. Of those not confirmed for surgery, we contacted 89.4 percent. Within the mandatory group, of those confirmed for surgery, we contacted 96.3 percent of the total to be called and of those not confirmed for surgery, we contacted 96.1 percent.

Within the voluntary group, over one third of the individuals exit the study. Within the mandatory group, 26.1 percent of the confirmed for surgery cases and 32.6 percent of the not confirmed for surgery cases exit the study. In order to exit the study an individual had to report receiving no medical treatment for two consecutive interviews (no medical treatment received at either first or second follow up interview). Surgical status has no bearing on whether an individual exits the study or not.

Table 23 shows the distribution of surgical status analyzed by confirmed/not confirmed for surgery status. Within the voluntary group, the majority of those confirmed for surgery reported having had the operation performed (74.7%) while the majority of those not confirmed for surgery reported not having had surgery performed (78.2%). Within the mandatory group, the majority of those confirmed for surgery (87.7%) reported having had surgery performed while the majority of those not confirmed for surgery (61.4%) reported

TABLE 22

Individuals Scheduled to Receive a Second Follow Up Interview

February, 1972 - April, 1980

	Voluntary				Mandatory			
	Confirmed		Not Confirmed		Confirmed		Not Confirmed	
	N	%	N	%	N	%	N	%
# Called	912	86.9	885	87.6	746	94.3	749	94.4
# Unable to Reach	112	10.7	105	10.4	29	3.7	30	3.8
# Refused to Answer	14	1.3	15	1.5	15	1.9	12	1.5
# Deceased	11	1.0	5	0.5	1	0.1	2	0.3
Total # To Be Called	1049	99.9	1010	100.0	791	100.0	793	100.0
% called of Total To Be Called less Refused to Answer and Deceased		89.1		89.4		96.3		96.1
Exit Study (% of # Called)	322	(35.3)	344	(38.9)	195	(26.1)	244	(32.6)

TABLE 23

Second Follow Up Data: Surgical Status Analyzed by Confirmed/Not Confirmed Status by Voluntary and Mandatory Groups

February, 1972 - June, 1980

	Voluntary				Mandatory				Total			
	Confirmed		Not Confirmed		Confirmed		Not Confirmed		Confirmed		Not Confirmed	
	N	%	N	%	N	%	N	%	N	%	N	%
Surgery Performed	681	74.7	193	21.8	654	87.7	289	38.6	1335	80.5	482	29.5
Surgery Not Performed	231	25.3	692	78.2	92	12.3	460	61.4	323	19.5	1152	70.5
Total	912	100.0	885	100.0	746	100.0	749	100.0	1658	100.0	1634	100.0

We can assert with 95 percent confidence that the proportion of patients observed within the voluntary and mandatory groups who were confirmed for surgery who did have the operation is within 5 percent of the true proportion of such patients.

Within both the voluntary and mandatory groups, we can assert with 95 percent confidence that the proportion of patients observed who were not confirmed who decided not to have the operation performed is within 5 percent of the true proportion of such patients.

having no surgery performed. It should be stressed that within the voluntary and mandatory groups, the proportion of those who were not confirmed for surgery who had not had surgery performed one year from the date of their consultation has remained consistent over time.

A disturbingly high percentage (19.5%) reported that surgery had not been performed even though two physicians, at least one of whom was a Board certified surgeon, recommended that surgery be scheduled. Within the voluntary group, 25.3 percent reported that surgery had not been performed. Within the mandatory group, 12.3 percent had not had the surgery.

Among the confirmed for surgery group, of the 681 individuals within the voluntary group who had surgery, 53 (7.8%)* did have the surgery performed between 6 and 12 months from the date of consultation. Within the mandatory group, 30 (4.6%)** had surgery performed since the first follow up. The overwhelming majority in both groups had the surgery because their symptoms or condition became worse (patient judgment).

Among the not confirmed for surgery cases, of those that did indicate that surgery has been performed, 32 (16.6%) within the voluntary group*** and 44 (15.2%) within the mandatory group* reported that surgery had been performed after the first follow up (between 6 and 12 months from the date of their consultation). The overwhelming majority within both the voluntary and mandatory groups said that they had the surgery performed because their symptoms or condition became worse (patient judgment).

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* Diagnostic categories are: surgery for mass, cyst (4); breast surgery (2); hernia (4); varicose vein (2); D & C (2); hysterectomy (4); cataract (11); other eye (2); other foot (4); hand (1); hip (2); knee (2); ear (2); T & A (1); kidney (3); bladder (2); prostatectomy (3); 'other' (2).

** Diagnostic categories are: heart surgery (1); GI (1); hernia (1); surgery for mass, cyst (2); D & C (1); hysterectomy (3); cataract (2); other eye (3); other foot (2); hand (1); knee (2); T & A (2); deviated septum (2); bladder (2); 'other' (5).

*** Diagnostic categories are: heart surgery (1); GI (2); surgery for mass, cyst (4); breast surgery (1); hernia (1); D & C (1); hsyterectomy (6); cataract (5); bunionectomy (1); other foot (1); hip (1); knee (1); ear (2); prostatectomy (2); 'other' (2); back (1).

Table 24 shows the distribution of those not confirmed for surgery who had not had surgery performed analyzed by selected diagnostic categories. Within the voluntary group, the overwhelming majority within each of the categories listed had not had the surgery performed. Within the mandatory group, except for those initially recommended for a hysterectomy, the majority within the categories listed had not had the procedure performed.

Data, not presented, showed that the consultant's advice has a profound effect on the patient's decision not to undergo surgery. Within the voluntary group, for example, of the 40 women who were not confirmed for breast surgery, 23 (57.5%) said that they decided not to have the surgery because the consultant advised against it. Nineteen of the 28 patients not confirmed for cataract surgery and 39 of the 73 women not confirmed for a hysterectomy gave the same reason; 26 of the 44 patients not confirmed for knee surgery, 26 of the 39 patients not confirmed for other foot surgery, and 18 of the 29 males not confirmed for prostate surgery so reported.

Within the mandatory group, the findings are similar: 17 of the 28 women not confirmed for breast surgery, 8 of the 16 individuals not confirmed for cataract surgery, 21 of the 32 women not confirmed for a hyster-

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* Diagnostic categories are: surgery for mass, cyst (1); breast surgery (1); varicose vein (2); D & C (6); hysterectomy (5); cataract (5); other eye surgery (4); bunionectomy (1); other foot (2); knee (1); surgery on bones and joints (1); surgery on fascia, tendon, muscle (1); ear surgery (1); kidney (2); bladder (1); prostatectomy (1); 'other' (9).

TABLE 24

Second Follow Up Data: Individuals Not Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Diagnostic Category, February, 1972 - June, 1980

Selected Diagnostic Category	Surgery Not Performed Voluntary Total Not Conf.	Total NCNS*	%	Mandatory Total Not Conf.	Total NCNS*	%
Breast Surgery	47	40	85.1	34	28	82.4
Cataract	40	28	70.0	29	16	55.2
Hysterectomy	108	73	67.6	73	32	43.8
Knee Surgery	57	44	77.2	20	15	75.0
Other Foot Surgery	42	39	92.9	54	38	70.4
Prostate	38	29	76.3	17	9	52.9

* NCNS = Not Confirmed, No Surgery

We can assert with 90 percent confidence that the proportion of patients observed in the voluntary group who were not confirmed for breast, knee, and other foot surgery as well as for a hysterectomy who did not have the surgery performed is within 10 percent of the true proportion of patients. We cannot make such assumptions in the mandatory group because the numbers are still too small.

ectomy, 22 of the 38 individuals not confirmed for other foot surgery, and 5 of the 9 men not confirmed for a prostatectomy decided not to have surgery performed because the consultant advised against it. Reasons for not having knee surgery were more diverse.

Table 25 shows the distribution of those confirmed for surgery who have not had the surgery performed analyzed by selected diagnostic categories. Within the voluntary group, the majority within each diagnostic category had had surgery performed. Yet, over one third of those initially recommended for other foot surgery and knee surgery still had not had the operation (38.5% and 36.4%, respectively). Due to the small numbers within the confirmed/no surgery group, however, the findings should be interpreted cautiously. Within the mandatory group the numbers are too small to permit meaningful analysis. In general, the overwhelming majority of those confirmed for surgery had the surgery performed.

Data, not presented, show that many of those who were confirmed for surgery decided not to have the operation because they felt that the surgery could be postponed. Three of the 7 women confirmed for breast surgery, for example, said they were postponing the operation. Six of the 14 individuals confirmed for cataract surgery so reported. Two of the 8 individuals confirmed for knee surgery reported that they decided not to have the operation because they feared surgery while 3 others reported that their symptoms/condition disappeared. Five of the 11 women confirmed for a hysterectomy said they decided not to have surgery because another, third, doctor did not advise the surgery. Three of the 9 men confirmed for a prostatectomy decided against having surgery on the basis of a third opinion.

Within the mandatory group, the individual confirmed for cataract surgery decided to postpone the operation. The woman confirmed for a hysterectomy refused to answer the question, and the man confirmed for a prostatec-

TABLE 25

Second Follow Up Data: Individuals Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Selected Diagnostic Category,

February, 1972 - June, 1980

Selected Diagnostic Category	Surgery Not Performed					
	Voluntary			Mandatory		
	Total Conf.	Total CNS*	%	Total Conf.	Total CNS*	%
Breast Surgery	56	7	12.5	32	6	18.8
Cataract	51	14	27.5	25	1	4.0
Hysterectomy	71	11	15.5	31	1	3.2
Knee Surgery	22	8	36.4	14	0	0
Other Foot Surgery	26	10	38.5	12	3	25.0
Prostate	36	9	25.0	11	1	9.1

* Confirmed, No Surgery

tomy reported that his symptoms lessened hence he decided not to have the operation. The responses among the other categories were more diverse.

Table 26 shows the distribution of those not confirmed for surgery who had not had the operation performed analyzed by reasons for not having the surgery. Within the voluntary and mandatory groups, the majority (76.7% and 66.5%, respectively) reported that they decided against having the operation because the second opinion consultant did not confirm the initially recommended surgical procedure.

Table 27 shows the breakdown of those confirmed for surgery who have not had surgery performed analyzed by reasons for not having the operation. Within the voluntary group, the plurality (39.0%) reported that they decided against having the surgery because they felt that the operation could be postponed. Roughly one quarter (23.7%) reported that they decided to follow the advice of another physician (neither the initial diagnosing physician nor the second opinion consultant). In 11.9 percent of the cases the symptoms appeared to disappear (patient judgment).

Within the mandatory group, one third (34.1%) felt that the surgery could be postponed. Roughly one fifth (20.7%) felt the condition was tolerable.

Table 28 illustrates the distribution of those not confirmed for surgery who had not had surgery performed analyzed by type of medical treatment received between the first and second follow up interviews. The plurality within both the voluntary and mandatory groups reported that they received no medical treatment (45.9% and 51.2%, respectively). Over one-quarter saw their doctor for at least one examination (29.0% and 27.6%, respectively). Within the voluntary group, 14.0 percent reported taking medication and 11.2 percent within the mandatory group so reported.

There were 288 individuals within the voluntary group and 236 within

TABLE 26

Second Follow Up Data: Individuals Not Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Reasons for Having No Surgery

February, 1972 - June, 1980

Reasons	Surgery Not Performed					
	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Surgery can be postponed (patient judgment)	31	5.9	41	10.3	72	7.8
Surgery too risky (patient judgment)	6	1.1	4	1.0	10	1.1
Patient fears surgery	8	1.5	8	2.0	16	1.7
Symptoms disappeared (patient judgment)	30	5.7	31	7.8	61	6.6
Condition tolerable	21	4.0	27	6.8	48	5.2
Followed advice of Consultant	401	76.7	264	66.5	665	72.3
Followed advice of other Doctor	26	5.0	22	5.5	48	5.2
Total	523*	99.9	397**	99.9	920[t]	99.9

* 169 individuals did not answer the question

** 63 individuals did not answer the question

t 232 individuals did not answer the question

TABLE 27

Second Follow Up Data: Individuals Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Reasons for Having No Surgery, February, 1972 - June, 1980

	Surgery Not Performed					
Reasons	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Surgery can be postponed (patient judgment)	69	39.0	28	34.1	97	37.4
Surgery too risky (patient judgment)	3	1.7	5	6.1	8	3.1
Patient fears surgery	20	11.3	7	8.5	27	10.4
Symptoms disappeared (patient judgment)	21	11.9	7	8.5	28	10.8
Condition tolerable	11	6.2	17	20.7	28	10.8
Followed advice of Consultant	11	6.2	7	8.5	18	6.9
Followed advice of other Doctor	42	23.7	11	13.4	53	20.5
Total	177*	100.1	82**	99.8	259[t]	99.9

* 54 individuals did not answer the question

** 10 individuals did not answer the question

[t] 64 individuals did not answer the question

TABLE 28

Second Follow Up Data: Individuals Not Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Type of Medical Treatment Received, February, 1972 - June, 1980

Type of Medical Treatment	Surgery Not Performed					
	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Examination	282	29.0	172	27.6	454	28.4
Medication	136	14.0	70	11.2	206	12.9
Physical Therapy	42	4.3	14	2.2	56	3.5
Cast/Brace	12	1.2	2	0.3	14	0.9
Other	55	5.6	46	7.4	101	6.3
No Treatment	447	45.9	319	51.2	766	48.0
Total	974	100.0	623	99.9	1597	100.0

the mandatory group who were not confirmed for surgery who neither had the operation nor reported receiving any medical treatment at the first and second follow up interview. These individuals are considered to be asymptomatic and exit the study. They represent 41.6 percent of the total number in the voluntary group and 51.3 percent in the mandatory group who were not confirmed for surgery and had not had surgery performed (the remainder reported receiving medical treatment either at the first or second interview). This group represents potential surplus surgery. Since neither surgery was performed nor medical treatment reported from the time of the consultation up to the time of the second interview, we legitimately question why surgery had been recommended in the first place.

Table 29 illustrates the distribution of individuals who were confirmed for surgery who have not had the operation performed analyzed by the type of medical treatment received since their first follow up interview. The plurality within the voluntary and mandatory groups (40.1% and 47.7%, respectively) reported receiving no medical treatment. Roughly 31 percent within the voluntary group and 28 percent within the mandatory group reported receiving at least one examination in the doctor's office. A similar percentage within both groups reported taking medication for their condition (15.4% and 13.8%, respectively).

There were 99 individuals within the voluntary group who had been confirmed for surgery who neither had the operation nor reported receiving medical treatment at the first and second interviews.* These individuals

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* Diagnostic categories are: cholecystectomy (9); hemorrhoidectomy (3); surgery for mass, cyst (13); breast (4); hernia repair (10); varicose vein (2); D & C (4); cataract (5); other eye (1); bunionectomy (1); other foot (4); hand (5); hip (3); knee (3); deviated septum (3); ear (4); T & A (1); kidney (1); bladder (2); prostatectomy (5); 'other' (16).

TABLE 29

Second Follow Up Data: Individuals Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Type of Medical Treatment Received, February, 1972 - June, 1980

Type of Medical Treatment	Surgery Not Performed					
	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Examination	105	30.5	36	27.7	141	29.7
Medication	53	15.4	18	13.8	71	15.0
Physical Therapy	11	3.2	3	2.3	14	3.0
Cast/Brace	6	1.7	2	1.5	8	1.7
Other	31	9.0	9	6.9	40	8.4
No Treatment	138	40.1	62	47.7	200	42.2
Total	344	99.9	130	99.9	474	100.0

represent 42.9 percent of the total number of individuals who were confirmed for surgery who did not have the operation. Within the mandatory group, 50 individuals who were confirmed for surgery neither had the operation nor any medical treatment since their consultation (54.3% of the total who were confirmed who had not had surgery performed).* These findings are disturbing in that these individuals could be jeopardizing or compromising their health and well-being by refusing to have the surgery performed. Surgery, in many cases, can be a highly effective means of treating the condition.

Table 30 shows the distribution of those not confirmed for surgery who had not had surgery nor any medical treatment (either at first or second follow up interview) analyzed by selected diagnostic categories. Within the voluntary group, almost two-thirds (61.5%) of those not confirmed for a hernia repair neither had the surgery nor reported receiving any medical treatment at all.

Within the mandatory group, 44.4 percent of those not confirmed for a hernia repair and 42.2 percent of those not confirmed for surgery on a mass, cyst, or lesion neither had the surgery nor reported receiving any medical treatment. The numbers are small, however, so interpretations should be made with caution.

This not confirmed, no surgery performed, no medical treatment received represents potential surplus surgery. We question why surgery was recommended in the first place. Further discussion of this cohort will be presented in a subsequent chapter.

Third Follow Up Evaluation: The third follow up evaluation is conducted

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* Diagnostic categories are: cholecystectomy (2); surgery for mass, cyst (6); breast (4); hernia repair (7); varicose vein (3); D & C (2); cataract (1); other eye (6); bunionectomy (4); other foot (2); hand (1); surgery on bones and joints (1); deviated septum (1); ear (1); T & A (1); prostatectomy (1); 'other' (7).

TABLE 30

Second Follow Up Data: Individuals Not Confirmed for Surgery Who Have Not Had Surgery Performed nor Medical Treatment at all Reported Analyzed by Selected Diagnostic Categories, February, 1972 - June, 1980

	No Surgery, No Medical Treatment at All					
	Voluntary			Mandatory		
Selected Diagnostic Categories	Total Not Conf.	Total NCNSMT*	%	Total Not Conf.	Total NCNSMT*	%
Breast Surgery	47	15	31.9	34	11	32.4
Cataract	40	11	27.5	29	5	17.2
Hernia Repair	26	16	61.5	27	12	44.4
Hysterectomy	108	30	27.8	73	13	17.8
Knee Surgery	57	17	29.8	20	7	35.0
Surgery on Mass, Cyst	108	41	38.0	83	35	42.2

* NCNSMT = Not Confirmed, No Surgery, No Medical Treatment at all

18 months from the date of the second opinion consultation. The questionnaire is designed to elicit information on the surgical and medical treatment status of the participants. That is, how many respondents have not had surgery performed, and why; how many reported receiving medical treatment. All information refers to the period of time from the second follow up interview (between 12 months to 18 months from the date of the second opinion consultation).

Table 31 shows the distribution of individuals scheduled to be contacted for a third telephone interview. All those who exited the study at the second follow up do not receive a third interview. Within the voluntary group, of those confirmed for surgery 94.4 percent were contacted and of those not confirmed for surgery 95.2 percent we contacted. Within the mandatory group, of those confirmed for surgery 92.8 percent we contacted and of those not confirmed for surgery, 91.7 percent we contacted. Roughly one third in each category exited the study at this time.

Table 32 shows the distribution of surgical status analyzed by confirmed/ not confirmed for surgery status. Within the voluntary group, the overwhelming majority of confirmed for surgery cases had the operation performed (82.0%). Conversely, the majority of those not confirmed reported that they had not had surgery performed (72.4%). Within the mandatory group, the overwhelming majority of those confirmed for surgery had the operation performed (94.2%). Among those not confirmed for surgery, less than half (47.7%) reported that they had not had surgery performed. It is the patient's decision to have surgery performed regardless of the consultant's recommendation. Many of the patients in this cohort reported that their condition was too uncomfortable to live with (patient judgment) hence surgery was elected.

Of the 474 respondents within the voluntary group who were confirmed

TABLE 31

Individuals Scheduled to Receive a Third

Follow Up Interview

February, 1972 - April, 1980

	Voluntary				Mandatory			
	Confirmed		Not Confirmed		Confirmed		Not Confirmed	
	N	%	N	%	N	%	N	%
# Called	578	93.4	474	92.6	311	91.2	287	90.3
# Unable to Reach	24	3.9	24	4.7	24	7.0	26	8.2
# Refused to Answer	10	1.6	4	0.8	5	1.5	4	1.3
# Deceased	7	1.1	10	2.0	1	0.3	1	0.3
Total # To Be Called	619	100.0	512	100.1	341	100.0	318	100.1
% called of Total To Be Called less Refused to Answer and Deceased		94.4		95.2		92.8		91.7
Exit Study (% of # Called)	196	(33.9)	153	(32.3)	103	(33.1)	79	(27.5)

TABLE 32

Third Follow Up Data: Surgical Status Analyzed by Confirmed/Not Confirmed Status by Voluntary and Mandatory Groups

February, 1972 - June, 1980

	Voluntary				Mandatory				Total			
	Confirmed		Not Confirmed		Confirmed		Not Confirmed		Confirmed		Not Confirmed	
	N	%	N	%	N	%	N	%	N	%	N	%
Surgery Performed	474	82.0	131	27.6	293	94.2	150	52.3	767	86.3	281	36.9
Surgery Not Performed	104	18.0	343	72.4	18	5.8	137	47.7	122	13.7	480	63.1
Total	578	100.0	474	100.0	311	100.0	287	100.0	889	100.0	761	100.0

We can assert with 95 percent confidence that the proportion of patients observed in both the voluntary and mandatory groups who were confirmed for surgery who did have the operation performed is within 5 percent of the true proportion of such patients.

We can assert with 95 percent confidence that the proportion of patients observed in the voluntary group who were not confirmed for surgery who did not have the operation performed is within 5 percent of the true proportion of such patients. We can assert with 95 percent confidence and be within 10 percent of of the true proportion of such patients within the mandatory group.

for surgery who had surgery performed, 19 (4%) had the operation performed since their second follow up interview.* Of the 293 individuals within the mandatory group, 10 (3.4%) had the surgery performed since their second follow up interview.** Of the 131 individuals within the voluntary group who were not confirmed for surgery who had surgery performed, 15 (11.5%) had the operation since their second follow up interview.*** Of the 150 individuals within the mandatory group who reported that surgery was performed, 7 (4.7%) had the operation since the second follow up interview.**** For both groups, the individuals reported that they had the surgery because their condition persisted or became worse (patient judgment).

Table 33 illustrates the distribution of individuals not confirmed for surgery who had not had surgery performed analyzed by selected diagnostic categories. Within the voluntary group, the majority within each of the diagnostic categories shown had not had the operation. With the possible exception of breast and prostate surgery,***** the diagnostic categories selected represent conditions for which surgery could be postponed or avoided without jeopardizing the patient's health. That is alter-

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* The diagnostic categories of the 19 are: cholecystectomy (1); G.I. (2); breast surgery (2); surgery on mass or cyst (1); hysterectomy (3); other eye (1); hand surgery (1); bladder surgery (3); 'other' (5).

** The diagnostic categories of the 10 are: breast surgery (3); surgery on mass or cyst (1); D & C (1); hysterecotmy (1); cataract (1); other foot (1); deviated septum (1); 'other' (1).

*** The diagnostic categories of the 15 are: G.I. (2); thyroidectomy (1); hysterectomy (4); cataract (3); other eye (1); hip surgery (1); T & A (1); prostatectomy (1); 'other' (1).

**** The diagnostic categories of the 7 are: hysterectomy (2); cataract (1); other eye (1); bunionectomy (1); 'other' (2).

***** Cases in which surgery was recommended because of a malignancy or because of a suspicious growth.

TABLE 33

Third Follow Up Data: Individuals Not Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Diagnostic Category

February, 1972 - June, 1980

Selected Diagnostic Category	Surgery Not Performed					
	Voluntary			Mandatory		
	Total Not Conf.	Total NCNS*	%	Total Not Conf.	Total NCNS*	%
Breast Surgery	25	20	80.0	8	6	75.0
Cataract	22	13	59.1	17	7	41.2
Hysterectomy	59	32	54.2	37	12	32.4
Knee Surgery	34	24	70.6	9	7	77.8
Other Foot Surgery	28	27	96.4	17	11	64.7
Prostate	22	15	68.2	14	8	57.1

* NCNS = Not Confirmed, No Surgery

nate medical treatment could be as effective as surgery in many of these cases. The numbers in the mandatory group are too small to permit meaningful conclusions to be drawn.

Table 34 shows the distribution of those who were confirmed for surgery who had not had the operation performed analyzed by selected diagnostic categories. Within the voluntary group, the majority had had the operation performed; however one fourth (23.8%) who were recommended by two doctors to have foot surgery had not had the operation and one fifth (20.0%) had not had knee surgery. The numbers are too small to permit meaningful analysis within the mandatory group.

Those who were not confirmed for surgery who had not had the operation were asked why the surgery had not been performed. Table 35 shows that within the voluntary and mandatory groups, the overwhelming majority responded that surgery was not scheduled because the second opinion consultant advised against having the operation (75.8% and 65.1%, respectively).

The individuals who were confirmed for surgery who had not had surgery performed were asked why the operation had not been scheduled. Since the initial diagnosing physician and the second opinion consultant both recommended that surgery be performed, we deemed it important to ascertain why the respondent decided against having surgery. Table 36 shows that within the voluntary group, the plurality stated that they felt that the surgery could be postponed. In one fifth of the cases (21.6%), the respondents were following the advice of another doctor (neither the initial diagnosing physician nor the second opinion consultant). Nine individuals stated that the consultant advised against surgery. It could be that the consultant said that surgery should be performed only if the patient wanted to have the operation. Patient misunderstanding or denial would further explain why surgery had not been performed.

TABLE 34

Third Follow Up Data: Individuals Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Diagnostic Category

February, 1972 - June, 1980

Selected Diagnostic Category	Surgery Not Performed					
	Voluntary			Mandatory		
	Total Conf.	Total CNS*	%	Total Conf.	Total CNS*	%
Breast Surgery	38	4	10.5	14	1	7.1
Cataract	34	6	17.6	12	0	0
Hysterectomy	51	7	13.7	20	1	5.0
Knee Surgery	15	3	20.0	10	0	0
Other Foot Surgery	21	5	23.8	5	0	0
Prostate	24	4	16.7	7	0	0

TABLE 35

Third Follow Up Data: Individuals Not Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Reasons for Having No Surgery, February, 1972 - June, 1980

	Surgery Not Performed					
Reasons	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Surgery can be postponed (patient judgment)	21	6.2	14	10.9	35	7.5
Surgery too risky (patient judgment)	5	1.5	2	1.6	7	1.5
Patient fears surgery	6	1.8	2	1.6	8	1.7
Symptoms disappeared (patient judgment)	27	8.0	15	11.6	42	9.0
Condition tolerable	10	2.9	5	3.9	15	3.2
Followed advice of Consultant	257	75.8	84	65.1	341	72.9
Followed advice of other Doctor	13	3.8	7	5.4	20	4.3
Total	339*	100.0	129**	100.1	468t	100.1

* 4 individuals did not answer the question

** 8 individuals did not answer the question

t 12 individuals did not answer the question

TABLE 36

Third Follow Up Data: Individuals Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Reasons for Having No Surgery, February, 1972 - June, 1980

	Surgery Not Performed					
Reasons	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Surgery can be postponed (patient judgment)	37	38.1	2	13.3	39	34.8
Surgery too risky (patient judgment)	4	4.1	0	0.0	4	3.6
Patient fears surgery	10	10.3	1	6.7	11	9.8
Symptoms disappeared (patient judgment)	10	10.3	2	13.3	12	10.7
Condition tolerable	6	6.2	2	13.3	8	7.1
Consultant Advised No Surgery*	9	9.3	4	26.7	13	11.6
Followed advice of other Doctor	21	21.6	4	26.7	25	22.3
Total	97**	99.9	15'	100.0	112t	99.9

*As reported by the patient

** 7 individuals did not answer the question

' 3 individuals did not answer the question

t 10 individuals did not answer the question

The number of individuals who were confirmed for surgery who had not had the operation performed are too small to permit meaningful analysis within the mandatory group.

Table 37 shows the type of medical treatment received among those who had not had the operation performed. The respondents were to indicate all types of treatment received within the six months from the time of the second follow up to the third follow up. Within the voluntary group, roughly one-half (48.0%) reported receiving no medical treatment since the second interview. One-third (29.0%) reported seeing their doctor for periodic examinations and one-tenth (13.8%) reported receiving medication. Within the mandatory group the plurality reported receiving no medical treatment (50.0%) since last contacted while 26.9 percent reported receiving periodic examinations and 17.3 percent were taking medication.

Table 38 shows the types of medical treatment received among those confirmed for surgery who had not had surgery performed. Within the voluntary group, almost half (41.2%) reported receiving no medical treatment since the second interview. About one third (32.8%) reported having had periodic examinations and roughly 12 percent were taking medication. Of the 23 individuals in the mandatory group who were confirmed for surgery who had not had the operation performed, 6 reported receiving no medical treatment since the last interview and 10 reported seeing their doctor for periodic examinations.

Fourth Follow Up Evaluation: For those individuals who have not exited from the study, a fourth and final, questionnaire is administered 24 months from the date of the second opinion consultation. Questions elicit information on surgical and medical treatment status (the questions are identical to those asked at the third follow up) and refer to the period of time from the third follow up to the fourth follow up (18 months to 24 months from

TABLE 37

Third Follow Up Data: Individuals Not Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Type of Medical Treatment Received, February, 1972 - June, 1980

Type of Medical Treatment	Surgery Not Performed Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Examination	116	29.0	42	26.9	158	28.4
Medication	55	13.8	27	17.3	82	14.7
Physical Therapy	6	1.5	1	0.6	7	1.3
Cast/Brace	4	1.0	2	1.3	6	1.1
Other	27	6.8	6	3.8	33	5.9
No Treatment	192	48.0	78	50.0	270	48.6
Total	400	100.1	156	99.9	556	100.0

TABLE 38

Third Follow Up Data: Individuals Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Type of Medical Treatment Received, February, 1972 - June, 1980

Type of Medical Treatment	Surgery Not Performed					
	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Examination	43	32.8	10	43.5	53	34.4
Medication	16	12.2	5	21.7	21	13.6
Physical Therapy	2	1.5	0	0	2	1.3
Cast/Brace	2	1.5	0	0	2	1.3
Other	14	10.7	2	8.7	16	10.4
No Treatment	54	41.2	6	26.1	60	39.0
Total	131	99.9	23	100.0	154	100.0

date of the consultation).

Table 39 shows the distribution of individuals scheduled to be called for a fourth and final interview. Those who exited at the third follow up are not included. Within the voluntary group, over 90 percent of those confirmed for surgery and those not confirmed for surgery were contacted. Within the mandatory group, of those confirmed for surgery, 90.8 percent were contacted while 88.2 percent of those not confirmed for surgery were contacted.

Table 40 shows the distribution of surgical status analyzed by confirmed/not confirmed for surgery status. Within the voluntary group, the overwhelming majority of those confirmed for surgery reported that they had had surgery performed (81.4%). Conversely, the majority of those not confirmed reported that they had not had surgery performed (69.1%). Within the mandatory group, the overwhelming majority of those confirmed for surgery had the surgery performed (94.9%) while less than half of those not confirmed for surgery (48.6%) reported that they had not had surgery performed.

Almost one fifth (18.6%) of those confirmed for surgery within the voluntary group and 5.1 percent within the mandatory group still had not had surgery performed despite the fact that two physicians, at least one of whom was a Board certified surgeon, recommended that the operation be performed. We hypothesize that these individuals probably would not have had surgery performed even if they had not sought a second surgical opinion.

Of the 271 individuals who were confirmed for surgery, 3 reported undergoing surgery since their third follow up. The diagnostic categories are: G.I. (1); surgery on mass or cyst (2). Within the mandatory group, one individual initially recommended for breast surgery did have the operation performed since the third follow up interview. Of the 88 individuals within the voluntary group who were not confirmed for surgery who reported

TABLE 39

Individuals Scheduled to Receive a Fourth Follow Up Interview

February, 1972 - April, 1980

	Voluntary				Mandatory			
	Confirmed		Not Confirmed		Confirmed		Not Confirmed	
	N	%	N	%	N	%	N	%
# Called	333	90.7	285	94.7	99	90.8	105	86.8
# Unable to Reach	30	8.2	14	4.7	10	9.2	14	11.6
# Refused to Answer	3	0.8	2	0.7	0	0	2	1.7
# Deceased	1	0.3	0	0	0	0	0	0
Total # To Be Called	367	100.0	301	100.1	109	100.0	121	100.1
% called of Total To Be Called less Refused to Answer and Deceased		91.7		95.3		90.8		88.2

TABLE 40

Fourth Follow Up Data: Surgical Status Analyzed by Confirmed/Not Confirmed Status by Voluntary and Mandatory Groups

February, 1972 - June, 1980

	Voluntary				Mandatory				Total			
	Confirmed		Not Confirmed		Confirmed		Not Confirmed		Confirmed		Not Confirmed	
	N	%	N	%	N	%	N	%	N	%	N	%
Surgery Performed	271	81.4	88	30.9	94	94.9	54	51.4	365	84.5	142	36.4
Surgery Not Performed	62	18.6	197	69.1	5	5.1	51	48.6	67	15.5	248	63.6
Total	333	100.0	285	100.0	99	100.0	105	100.0	432	100.0	390	100.0

We can assert with 95 percent confidence that the proportion of patients within both the voluntary and mandatory groups who were confirmed for surgery who had the operation is within 5 percent of the true proportion of such patients.

We can assert with 95 percent confidence that the proportion of patients within the voluntary group who were not confirmed for surgery who decided not to have the operation performed is within 10 percent of the true proportion of such patients. We cannot make such an assumption for those patients within the mandatory group.

having had surgery, 8 (9.1%) had the operation performed since their third follow up interview. The diagnostic categories are: thyroidectomy (2); mass, cyst, lesion (1); D & C (1); hysterectomy (1); other eye (1); deviated septum (1); 'other' (1). Of the 54 individuals within the mandatory group, 3 (5.6%) had the surgery performed after the third interview. The diagnostic categories are: heart (1); hysterectomy (1); other foot (1).

Table 41 shows the distribution of selected diagnostic categories analyzed by those who were not confirmed for surgery who haven't had the operation. Within the voluntary group, the majority in each category listed had not had surgery performed. The numbers within the mandatory group are too small to permit meaningful analyses.

Table 42 shows the distribution of those confirmed for surgery who had not had the operation performed analyzed by selected diagnostic categories, the majority had had the surgery. Data not presented showed that the two women who were advised to undergo breast surgery and 2 of the 3 men advised to have prostate surgery decided not to because another physician (neither the initial diagnosing physician nor the second opinion consultant) advised against surgery. The reasons for not having the surgery for the other categories listed were more diverse. Patients either felt that the surgery could be postponed as in the case of 1 individual initially recommended for cataract surgery and 2 of the 3 individuals initially recommended for knee surgery or they feared surgery as in the case of one individual initially recommended for a hysterectomy. Within the mandatory group, only one individual confirmed for a hysterectomy had not had the surgery performed. Her reason for not having the operation was because her symptoms or condition disappeared (patient judgment).

Table 43 shows the distribution of those not confirmed who have not had surgery performed analyzed by reasons for not having the operation

TABLE 41

Fourth Follow Up Data: Individuals Not Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Diagnostic Category, February, 1972 - June, 1980

Selected Diagnostic Category	Surgery Not Performed: Voluntary Total Not Conf.	Voluntary Total NCNS*	Voluntary %	Mandatory Total Not Conf.	Mandatory Total NCNS*	Mandatory %
Breast Surgery	16	14	87.5	5	5	100.0
Cataract	18	11	61.1	12	2	16.7
Hysterectomy	33	17	51.5	13	5	38.5
Knee Surgery	15	12	80.0	2	2	100.0
Other Foot Surgery	19	18	94.7	4	3	75.0
Prostate	13	10	76.9	1	1	100.0

* NCNS = Not Confirmed, No Surgery

TABLE 42

Fourth Follow Up Data: Individuals Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Diagnostic Category, February, 1972 - June, 1980

Selected Diagnostic Category	Surgery Not Performed: Voluntary Total Conf.	Voluntary Total CNS*	Voluntary %	Mandatory Total Conf.	Mandatory Total CNS*	Mandatory %
Breast Surgery	22	2	9.1	6	0	0
Cataract	23	4	17.4	7	0	0
Hysterectomy	32	4	12.5	7	1	14.3
Knee Surgery	10	3	30.0	5	0	0
Other Foot Surgery	11	3	27.3	1	0	0
Prostate	11	3	27.3	1	0	0

* CNS = Confirmed, No Surgery

TABLE 43

Fourth Follow Up Data: Individuals Not Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Reasons for Having No Surgery, February, 1972 - June, 1980

Reasons	Surgery Not Performed					
	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Surgery can be postponed (patient judgment)	9	4.7	5	10.4	14	5.8
Surgery too risky (patient judgment)	1	0.5	1	2.1	2	0.8
Patient fears surgery	7	3.6	0	0	7	2.9
Symptoms disappeared (patient judgment)	15	7.8	2	4.2	17	7.1
Condition tolerable	3	1.6	2	4.2	5	2.1
Followed advice of Consultant	146	75.6	35	72.9	181	75.1
Followed advice of other doctor	12	6.2	3	6.3	15	6.2
Total	193*	100.0	48**	100.1	241t	100.0

* 4 individuals did not answer the question

** 3 individuals did not answer the question

t 7 individuals did not answer the question

performed. Within both the voluntary and mandatory groups, the majority elected not to have the surgery because the second opinion consultant advised against surgery (75.6% and 72.9%, respectively). Data not presented clearly show that the consultant's advice has a profound affect on the patient's decision not to undergo surgery. Within the voluntary group, for example, 15 of the 17 women initially recommended for a hysterectomy decided against having the operation because the consultant did not advise having the surgery. Twelve of the 14 individuals initially recommended for breast surgery, 9 of the 11 individuals initially recommended for lens extraction, 6 of the 12 individuals initially recommended for knee surgery, 11 of the 18 individuals initially recommended for foot surgery (excluding bunionectomies), and 9 of the 10 men initially recommended for prostate surgery decided against the operation because of the second opinion consultant's recommendation.

Within the mandatory group, all of those who were initially recommended for knee surgery, foot surgery (excluding bunionectomies), and prostate surgery decided against the operation based on the second opinion consultant's recommendation. Three of the 5 women initially recommended for breast surgery and 1 of the 2 individuals initially recommended for cataract surgery did not have the surgery because of the consultant's advice.

Table 44 shows the distribution of reasons for not having the surgery among the confirmed for surgery, no surgery performed group. Within the voluntary group, 31.0 percent reported that they were following the advice of another physician (neither the initial diagnosing physician nor the consultant). One quarter (22.4%) reported that they felt that the surgery could be postponed. Eleven individuals reported that they had not had surgery because the consultant advised against it. These individuals were either denying the fact that the consultant recommended surgery or were

TABLE 44

Fourth Follow Up Data: Individuals Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Reasons for Having No Surgery, February, 1972 - June, 1980

	Surgery Not Performed					
Reasons	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Surgery can be postponed (patient judgment)	13	22.4	1	25.0	14	22.6
Surgery too risky (patient judgment)	2	3.5	0	0	2	3.2
Patient fears surgery	6	10.3	0	0	6	9.7
Symptoms disappeared (patient judgment)	4	6.9	2	50.0	6	9.7
Condition tolerable	4	6.9	1	25.0	5	8.1
Patient said that Consultant did not advise surgery	11	19.0	0	0	11	17.7
Followed advice of other Doctor	18	31.0	0	0	18	29.0
Total	58*	100.0	4**	100.0	62[t]	100.0

* 4 individuals did not answer the question

** 1 individual did not answer the question

t 5 individuals did not answer the question

interpreting the second opinion's recommendation as one which advised surgery only if the patient so desired. Evidently these individuals did not desire surgery. The numbers in the mandatory group are too small to draw meaningful conclusions.

Individuals contacted at the fourth follow up have received medical treatment throughout most of the two year time period (individuals who report receiving no medical treatment for their condition exited the study at either the second or third follow up, hence they are not contacted a fourth time). Table 45 shows that within the voluntary group, of those not confirmed for surgery who had not had the surgery performed, 35.3 percent reported that they did not receive any form of medical treatment since the third interview. One-third (34.1%) reported seeing their doctor for periodic examinations and 19.7 percent reported taking medication for their condition.

Within the mandatory group, 37.5 percent reported receiving no medical treatment since the third call and one third (35.9%) reported seeing their doctor periodically. Evidentially, periodic medical examinations and/or medication were successful treatment modalities which negated the need for surgery. Those who reported receiving no medical treatment since last contact had been treated medically in the past and apparently now were no longer in need of medical or surgical treatment.

Table 46 shows the breakdown of those confirmed for surgery who had not had surgery performed analyzed by medical treatment status. Within the voluntary group, 45.2 percent reported receiving no treatment since the third interview. Evidently treatment which had been received was discontinued or terminated. One third (34.2%) reported seeing their physician for periodic examinations. Those receiving some type of medical treatment appear to be doing well and apparently do not feel the need to undergo surgery. The numbers in the mandatory group are too small to permit meaningful conclusions to be drawn.

TABLE 45

Fourth Follow Up Data: Individuals Not Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Type of Medical Treatment Received, February, 1972 - June, 1980

Type of Medical Treatment	Surgery Not Performed					
	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Examination	85	34.1	23	35.9	108	34.5
Medication	49	19.7	11	17.2	60	19.2
Physical Therapy	5	2.0	2	3.1	7	2.2
Cast/Brace	4	1.6	0	0	4	1.3
Other	18	7.2	4	6.3	22	7.0
No Treatment At All	88	35.3	24	37.5	112	35.8
Total	249	99.9	64	100.0	313	100.0

TABLE 46

Fourth Follow Up Data: Individuals Confirmed for Surgery Who Have Not Had Surgery Performed Analyzed by Type of Medical Treatment Received, February, 1972 - June, 1980

Type of Medical Treatment	Surgery Not Performed					
	Voluntary		Mandatory		Total	
	N	%	N	%	N	%
Examination	25	34.2	4	80.0	29	37.2
Medication	8	11.0	0	0	8	10.3
Physical Therapy	3	4.1	0	0	3	3.8
Cast/Brace	0	0	0	0	0	0
Other	4	5.5	0	0	4	5.1
No Treatment At All	33	45.2	1	20.0	34	43.6
Total	73	100.0	5	100.0	78	100.0

Evaluation of Not Confirmed Cases in General Surgery, Gynecology, and Orthopedics: Substudy Findings

Given the fact that the majority of those who had not been confirmed for surgery did not have the surgery performed, and given the fact that the most frequently mentioned explanation for not having the surgery performed was that the consultant felt that the operation should not be performed, we decided that it was important to investigate further the reasons for non-confirmation. That is, it was deemed important to review the actual medical records of those individuals who were not confirmed for surgery to ascertain why the consultant advised against the operation.

Two general surgeons, both panel members since 1972, initiated the pilot study. They reviewed the medical charge of 318 patients, examined by them in their capacity as second opinion consultant, who either voluntarily sought the second opinion or were required to have the consultation before surgery was performed. No stratification was made by type of second opinion program due to the small numbers involved. Of the 318 patients, 48 (15%) were not confirmed for surgery.

The surgeons collectively reviewed and evaluated the 48 cases. Since the records were combined, each was reviewing the other's notes. Table 47 shows the distribution of referral diagnoses and the number which were not confirmed. Six categories of reasons for not endorsing the proposed surgery were created. Of the 48 cases, the surgeons found that in 37.5 percent of the cases, no pathological justification for surgery was demonstrated. Medical treatment was preferable to surgery in 31 percent of the cases. In 10 percent of the cases they felt that surgery should be deferred pending results of medical treatment. Further diagnostic evaluation was considered necessary in 10 percent of the cases and surgery was approved on an ambulatory basis only in 8 percent of the cases. Surgery was contraindicated in 2 percent of the cases.

TABLE 47

Referral Diagnoses of General Surgical Procedures Which Were Not Confirmed for Surgery, 1972-1978

	No.	Not Confirmed
Chronic cholecystitis	53	3
Benign breast disease	42	8
Inguinal hernia	35	1
Benign skin lesions	28	5
Benign anal lesions	27	6
Thyroid disease	9	3
Duodenal ulcer	5	3
Abdominal pain	4	4
Diverticulosis	3	3
Ulcerative colitis	3	1
Hiatus hernia	3	1
Parotid tumor	3	1
Rectal polyp	2	2
Carcinoma, esophagus	1	1
Lymphoma, stomach	1	1
Drug-induced purpura	1	1
Foot ulcer	1	1
Hematoma, leg	1	1
Lipoma, arm	1	1
Sebaceous cyst	1	1
	224	48

The pilot study was expanded to include all not confirmed cases in the subspecialties of gynecology and orthopedics. Gynecology and orthopedics were the two subspecialties with the highest non-confirmation rates, hence the interest. There were 380 cases which were not confirmed for gynecological surgery for which medical records could be otbtained (86% of the total 442 cases) and there were 239 cases not confirmed for orthopedic surgery for which medical records were obtained (72% of the total 333 cases). The records were reviewed by the Cornell research staff and categorized for non-confirmation.

Among the gynecology cases, over half (51%) had been not confirmed for a hysterectomy, 19.2 percent were not confirmed for dilation and curretage, and 14.2 percent were not confirmed for surgery to remove a mass or cyst (excluding ovarian cyst). The remainder were not confirmed for other gynecological surgery. The distribution of reasons for non-confirmation are listed in Table 48. In one third of the cases, the consultants felt that the symptoms were not severe enough to warrant surgery. Further evaluation was needed in 21.3 percent of the cases and no pathology was evident in 16.6 percent of the cases.

Among the orthopedic cases, 27.2 percent were not confirmed for foot surgery (excluding bunions) and 25.1 percent were not confirmed for knee surgery. The remainder were not confirmed for other orthopedic surgery (back, hip, hand, tendons, muscles, fascia). Table 49 lists the reasons for non-confirmation. By and large, the orthopedic consultants recommended against surgery in favor of more conservative treatment. That is, in 23.4 percent of the cases, a cast, brace or corrective footwear was preferable to surgery. In 22.6 percent of the cases physical therapy/exercises was preferable. In one-fifth of the cases symptoms were judged not severe enough to warrant surgery.

TABLE 48

Reasons for Non confirmation by the Gynecological Consultants, 1972-1978

Reasons	Number	Percent
Symptoms not severe enough to warrant surgery	126	33.2
Further evaluation is needed	81	21.3
No pathology evident	63	16.6
Medical treatment preferable	41	10.8
Alternate procedure recommended	38	10.0
Surgery deferred pending medical tests	30	7.9
Other	1	0.3
Total	380	100.1

TABLE 49

Reasons for Non Confirmation by the Orthopedic Consultants, 1972-1978

Reasons	Number	Percent
Cast, brace or footwear preferable	56	23.4
Physical therapy/exercise preferable	54	22.6
Symptoms not severe enough to warrant surgery	49	20.5
Medical treatment preferable	37	15.5
Further evaluation needed	19	7.9
Surgery deferred pending medical tests	10	4.2
Alternate procedure recommended	9	3.8
No pathology evident	5	2.1
Total	239	100.0

Summary of Utilization Phase of the Cornell-New York Hospital Second Opinion Study

Findings from the Cornell-New York Hospital second opinion program, based on over 11,000 consultations scheduled during the past seven and one half years, consistently have shown that roughly one-third of those voluntarily seeking a second opinion consultation and roughly 18 percent of those who were required to seek a second opinion consultation were not confirmed for the surgery by the Board certified panel consultant. The data have also shown that those initially recommended for knee surgery, bunionectomies, hysterectomies, and prostatectomies consistently have had the highest rates of non-confirmation. These findings are the same for both the voluntary and mandatory programs.

The findings from the first follow up phase of the study clearly show that the overwhelming majority within both the voluntary and mandatory groups who were not confirmed for surgery had not had the operation performed. While it is unclear how many of these individuals would not have had the surgery in the absence of the program, the data do indicate that in the majority of the cases, the surgery was deferred on the basis of the consultant's recommendation.

It is the second follow up survey, however, that provides the best indicator of the program's ability to screen potential surplus surgery. Findings show that the majority in both the voluntary and mandatory groups who were not confirmed for surgery had not had the operation performed one year from the date of their consultation. The number of individuals who reported receiving no medical treatment during the year's time is of particular interest. There were 288 individuals within the voluntary group and 236 within the mandatory group, for example, who were not confirmed for surgery who neither had the operation performed nor reported receiving any medical treatment during the year's time. Of note is the comparatively high percentage of individuals recommended for a hernia repair among this cohort. One can legitimately question, for example, whether these individuals actually had a hernia at all.

This not confirmed, no surgery performed, no medical treatment group represents potential surplus surgery. Evidentally, these individual's condition did not warrant any form of surgical-medical treatment and their health had not been imparred. Aside from being spared the pain, discomfort, and time lost during convalescence, this group represents an actual savings (direct and indirect costs avoided).

Findings from the third and fourth follow up surveys (conducted 18 and 24 months from the date of the consultation, respectively) clearly show that if surgery is going to be performed, it is scheduled before the first follow up interview is administered. Very few individuals who were either not confirmed for surgery or confirmed for surgery have the operation performed after 6 to 21 months from the date of their second opinion consultation. Findings from the interviews conducted after the second follow up also show that many who were not confirmed for surgery who elected not to have the operation performed were treated successfully medically rather than surgically. That is, periodic examinations and/or medication appear to have been effective means of treating the condition.

While the second opinion program can serve to screen potential surplus surgery, it also acts to reassure the patient that surgery is in his or her best interest. An independent, unbiased evaluation of the patient's condition serves to reiterate the necessity or appropriateness for surgery. Findings show that the majority of those in both the voluntary and mandatory groups who were confirmed for surgery did have the operation performed, usually within three months from the date of the consultation. There is not a long period of deliberation. As was true with those not confirmed for surgery who decided to have the operation, if surgery is elected, it is scheduled fairly soon after the second opinion consultation. It is not clear, however, how many individuals would have had the operation performed had the second opinion program not been available.

The data do show that 25.3 percent within the voluntary group and 12.3 percent within the mandatory group who were confirmed for surgery had not had surgery performed one year since they saw the second opinion consultant. It is this confirmed, no surgery performed group which could be labeled the population at risk. Surgery can be a very effective form of treatment, and, in some instances, the only effective treatment, and should not be postponed. These individuals had been advised by two physicians, at least one of whom was a Board certified surgeon, to have surgery, yet they chose not to have the operation. Findings also show that there were 99 individuals within the voluntary group and 50 within the mandatory group who had been confirmed for surgery who neither had the operation performed nor reported receiving any medical treatment during the 12 months since their consultation. These individuals are no longer followed in the study, hence outcome status over time cannot be determined.

While the physician's recommendation for surgery should be based on his or her considerations of the advantages and disadvantages of such a course of treatment, it is ultimately up to the patient to decide whether to have the operation or not. The second opinion program serves to assist the individual recommended for elective surgery to make a more informed decision. Since it was conceivable that many of the patients would not have been recommended for elective surgery by a surgeon, it was of interest to examine differences in non-confirmation among the initial diagnosing physicians. Interestingly, Chi Square statistics showed highly statistical non-significance between those initial diagnosing physicians who were Board certified and those who were not among the voluntary and mandatory groups ($p > 0.2$). Moreover, there was no statistical difference among those who were Boarded in one of the surgical subspecialties, those who were Boarded in Internal Medicine, and those who were not Board certified ($p > 0.2$) among the voluntary and mandatory groups. Hence, it appears that Board status of the initial diagnosing physician has no statistical effect on not confirmed for surgery status in both voluntary and mandatory programs. Rather, it is the surgical specialty and diagnostic category that provide a better indicator of not confirmed for surgery status.

The findings show that often a second opinion consultant can recommend a more conservative course of treatment which would not jeopardize the patient's health. The fact that the majority of those not confirmed in both the gynecology and orthopedic groups did not have the surgery performed on the basis of the consultant's recommendation strengthens the argument for encouraging a second opinion when elective surgery is recommended, particularly among these subspecialties.

Chapter 5

Cost-Benefit Analysis -- Methodology and Data Base

Introduction

The presentation in this chapter: (a) details the general structure of a cost-benefit analysis, (b) develops a model of the Cornell-New York Hospital second opinion program which forms the basis for the specific cost-benefit caluclations, and (c) describes the study population, data base, and time frame selected for the analysis. As was described in Chapter 3, the Cornell-New York Hospital mandatory program requires persons to obtain a second opinion prior to undergoing an elective surgical procedure. The second opinion consultant confirms or does not confirm a previously recommended surgical procedure; yet, the decision to undergo surgery is made by the individual. The principle focus of this analysis is the economic aspects of the decision to elect or reject surgery.

Cost-Benefit Analysis

Two major benefit categories were delineated for the current study: (1) savings of health related resources and (2) avoided work-loss and restricted activity days. The first type of saving reflects surgeon and physician care, hsopital days, drug and therapy use, and ancillary service use saved as a result of the second opinion program. Savings stemming from work-loss and restricted activity days avoided reflect the indirect benefits gained from the second opinion program. The cumulative monetary value of both types of benefits are compared with the cost of the second opinion program. Program cost consists of the administrative costs incurred to operate the program, the expenditures for the second opinion consultation visits and any ancillary tests ordered as part of the consultation, and out-of-pocket costs incurred by program participants in obtaining the consultation; e.g., travel cost and wage loss due to work-time missed in order to obtain the second opinion consultation.

In general, the cost-benefit frame work can be set out as follows:

$$PV_b = \sum_{t=1}^{m} \sum_{i=1}^{m} \frac{B_t^i}{(1 + r)^t} \quad ; \quad PV_c = \sum_{t=1}^{m} \sum_{t=1}^{m} \frac{C_t^i}{(1 + r)^t}$$

where PV_b = present value of benefits

PV_c = present value of costs

B_t^i = i^{th} benefit being realized in the t^{th} time period

C_t^i = the i^{th} cost being realized in the t^{th} time period

r = the discount rate

i = i^{th} benefit or cost category

t = time period

$\sum$ = a symbol indicating the sum of costs and benefits accruing over time

Since cost-benefits analyses usually span a multi-year time period, costs and benefits accuring after the first year must be discounted to eliminate the effect of inflationary factors on the cost and benefit cash-flow streams.

The benefit-cost ratio (B/C) is derived by dividing the benefits gained by the costs incurred. That is

$$B/C = \frac{PV_b}{PV_c}$$

A B/C ratio greater than 1 indicates that the value of the benefits exceed the costs incurred, and as a result economic benefits accrue. Conversely, a B/C ratio less than 1 indicates that costs incurred exceed the monetary value of the ensuing benefits, and as costs are not fully recovered, the program lacks economic merit.

An alternate formulation used to calculate the economic value of a program is its net present value (NPV). This statistic is calculated as

$$NPV = PV_b - PV_c$$

A positive NPV indicates that the value of the benefits exceeds the cost incurred; and a negative NPV indicates the reverse. Both the benefit-cost ratio and the NPV statistic are frequently used as guides for policy-making because they telegraph economic efficacy in a simple statistic. That is, resource investment is deemed to be appropriate in areas where $B/C > 1$ or, alternately, where $NPV > 0$.

A Model of the Cornell-New York Hospital Second Opinion Program

The goal of the second opinion program is to provide the patient with additional information regarding the proposed surgery thereby enhancing the patient's decision making process. As a result of this additional information, it is hypothesized that for some individuals the incidence of and expenditures for surgery will be reduced.

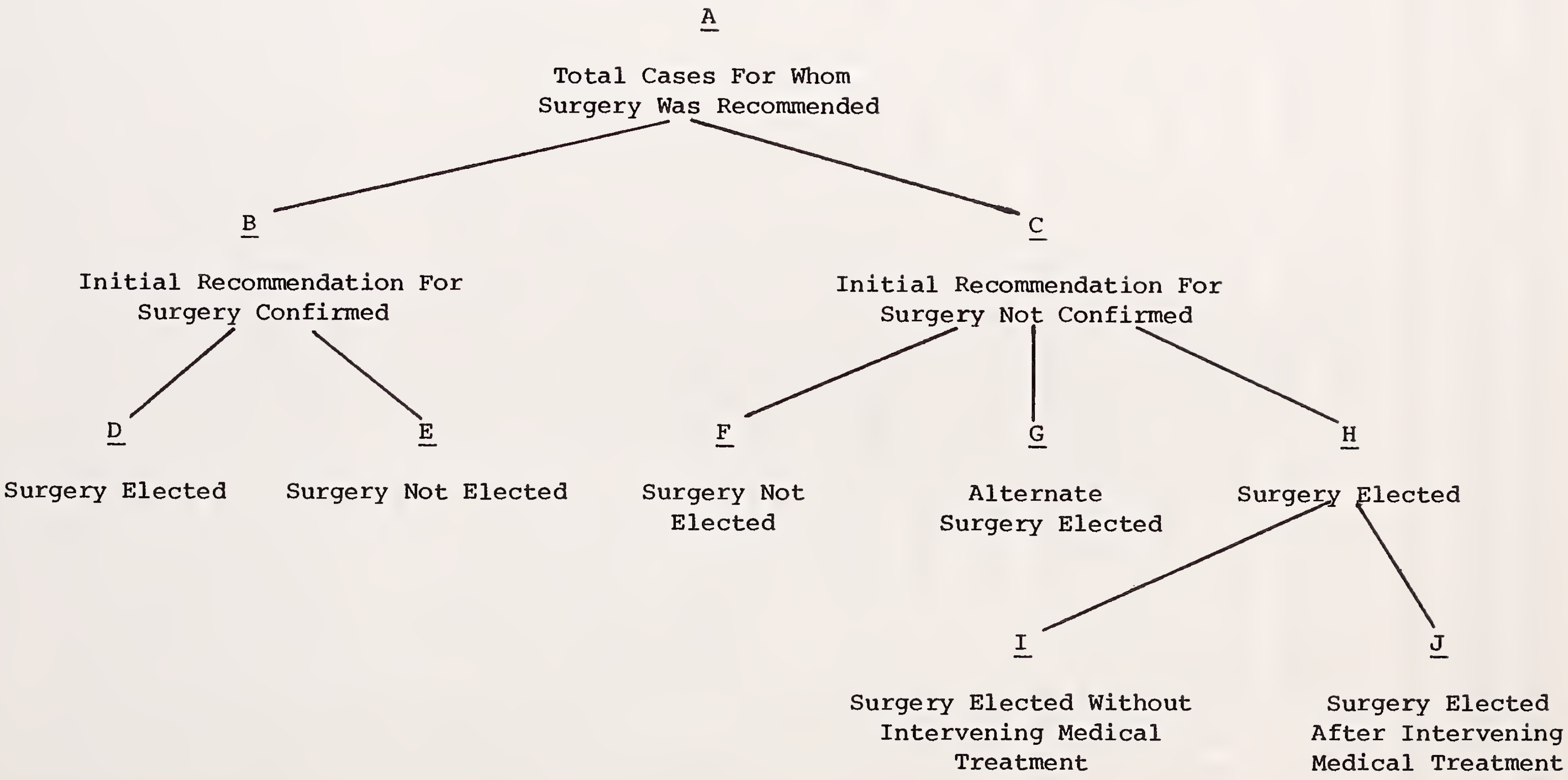
The primary focus of this cost-benefit analysis is to document empirically cost-containment potential of the second opinion program.

The following rule was adopted in the modeling of the program: Any recommendation emanating from the consultation process that could potentially lead to reduced health care expenditures is considered to be a non-confirmation of the original recommendation for surgery; e.g., surgery performed on an ambulatory basis. This is the case even if the new recommendation results in a modified surgical regimen or if the initial recommendation for surgery is ultimately accepted after trying a recommended medical treatment. Clearly a different perspective would be adopted if one were solely interested in ascertaining the reduction in surgical utilization.

The flow chart presented in Exhibit 2 depicts the way in which individuals eligible to participate in the Cornell-New York Hospital second opinion program are categorized into one of several distinct groups following an initial recommendation for elective surgery. Cohort A represents all individuals who were told by their initial physician that they require elective surgery, and under the terms of their health coverage, seek a second opinion before electing surgery in order to insure reimbursement for any ensuing medical expenses. Either persons obtaining a second opinion will have the initially recommended surgery confirmed or the surgery will not be confirmed by the second opinion consultant. Hence, cohort A can be disaggregated into two groups, one for whom the initial recommendation for surgery is confirmed (cohort B) and one for whom the initial recommendation for surgery is not confirmed (cohort C). Individuals participating in the second opinion program may request an additional (i.e., third) consultation. In such cases, the opinion of the last (i.e., second) consultant determines whether the initial recommendation for surgery is considered to be

EXHIBIT 2

PROGRAM STRUCTURE


A
Total Cases For Whom Surgery Was Recommended
B
Initial Recommendation For Surgery Confirmed
C
Initial Recommendation For Surgery Not Confirmed
D
Surgery Elected
E
Surgery Not Elected
F
Surgery Not Elected
G
Alternate Surgery Elected
H
Surgery Elected
I
Surgery Elected Without Intervening Medical Treatment
J
Surgery Elected After Intervening Medical Treatment

confirmed.[*],[**]

Individuals receiving a confirmation of the need for surgery (cohort B) can be disaggregated into two categories. One category (cohort D) consists of people who elect the surgical procedure that was initially recommended.[+] The other category (cohort E) consists of individuals who decided not to elect surgery.

Individuals whose initial recommendation for surgery is not confirmed (cohort C) can be disaggregated into three categories. The first category (cohort F) consists of individuals who decide not to elect surgery.[++] The second category (cohort G) encompasses individuals who received a recommendation for an alternate surgical regimen and elected it.[+++] Those individuals electing the original surgical procedure (i.e., the procedure recommended by the first physician they visited) are included in the third category (cohort H). These individuals are further disaggregated into two subcategories: those electing surgery without any intervening medical treatment (cohort I), and those electing surgery after some intervening medical treatment (cohort J).*

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[*] If a consultant suggests that the patient obtain a medical consultation to determine their ability to withstand surgery, this medical consultation is considered as a regular physician visit in the post-consultation period. Should the patient be advised not to have surgery by the medical consultant, the person is considered as part of cohort E (confirmed, no surgery); however, if surgery is elected, individuals are classified as confirmed, surgery cases.

[**] It two consultations are provided, the cost of both are included in the analysis of the cost of the second opinion program.

[+] This category includes both individuals who elected surgery immediately and those who initially postponed surgery but decided to elect it within the one year time frame of the current analysis.

[++] This group includes both those individuals who followed the recommendation of a consultant not to have surgery and those who were advised to pursue an alternate surgical regimen and elected not to.

[+++] An alternative surgical regimen is defined as either a modified surgical procedure; one surgical procedure where more than one procedure was initially recommended; or the performance of the recommended procedure on an ambulatory rather than an inpatient basis.

The disaggregation of individuals into cohorts B (initial recommendation for surgery confirmed) and C (initial recommendation for surgery not confirmed) provides the basis for evaluating the economic benefits of the Cornell-New York Hospital second opinion program. The research questions posed in the cost-benefit study can be stated as follows: Are the costs incurred by individuals in cohort C less than those incurred by individuals in cohort B? If this is the case, one can assert that the second opinion program reduced health care expenditures. Furthermore, are the savings (e.g., reduced costs) attributable to the second opinion program greater than the costs incurred by the program? If this is the case, one can assert that since the benefits accruing from the program exceed the costs of the program, the Cornell-New York Hospital second opinion program is deemed to be cost-beneficial.

The study design adopted to answer these questions entails matching every person in cohort C with a person randomly drawn from cohort B. Thus the cost-benefit study includes the entire population of cohort C and a matched sample of those in cohort B.**

Representing the aggregate cost experience of the confirmed cohort (cohort B) by the term B_c and the aggregate cost experience of the not confirmed cohort (cohort C) by C_c, one can define program benefit as:

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* Individuals included in this category consist of people who are ultimately advised by their physician to elect the surgery because an alternate medical treatment has not been successful, and people who may prematurely reach a decision on their own that a medical regimen is not successful and elect surgery.

** The modeling of the Cornell-New York Hospital second opinion program does not address the issue of diagnostic mix within category since the number of participants in the program during the time period covered by the HCFA research contract is not large enough to support a diagnosis specific cost-benefit analysis.

$$\text{Benefit} = B_c - C_c \tag{1}$$

Under this definition, benefit is the sum of all costs averted. (This conceptualization of program benefit is based on the standard approach for measuring economic benefits of health care programs[1-5]). Costs averted are ascertained by subtracting the cost experience of the nonconfirmed group (C_c) from the cost experience of the confirmed group (B_c). If the total cost of the second opinion program is represented by the term U_c, the benefit-cost ratio becomes:

$$\text{Benefit/cost} = \frac{B_c - C_c}{U_c} \tag{2}$$

Alternately, one can calculate the net program benefit (NPV) as:

$$\text{NPV} = (B_c - C_c) - U_c \tag{3}$$

To further indicate the potentail value of the Cornell-New York Hospital second opinion program, one can divide total net program benefit by the total number of individuals receiving a second opinion consultation. Representing the total number of people receiving a second opinion consultation by the letter P, net benefit per program participant (NPV/P) is calculated as:

$$\text{NPV/P} = \frac{(B_c - C_c) - U_c}{P} \tag{4}$$

The quantification of program benefit as presented in equations (1) through (4) may understate the pure effect of a second opinion program as implicit recognition is being given to prevailing individual preferences and behavior patterns that may negate some of the effect of such a program. When individual behavior deviates from professional opinion, these individuals are labelled "noncompliant". Two types of noncompliant behavior are relevant for the current study. First, there are some individuals who will refuse to undergo surgery even when the need for surgery is confirmed by a second physician. (This group can be referred to as the anti-surgery group). Alternately, there are some individuals who may be favorably disposed toward surgery and would elect surgery regardless of the consultant's recommendation. (This behavior pattern can be called the pro-surgery group.) Ideally, one would select appropriate control groups to estimate independently the magnitude of these two effects and then to adjust the benefit estimates contained in equations (1) through (4). Unfortunately, such controls are not available for the current study and proxies must be sought from the various cohorts represented in Exhibit 2. Cohort I can be used as a proxy for those individuals who are favorably disposed toward surgery as they elected surgery when the need for the operation was not confirmed by a consultant surgeon. Cohort E can be used as a proxy for those individuals who will refuse surgery, as they elected not to undergo surgery even after the need for it was confirmed by a second physician.

The behavior patterns of cohort E represent a saving not due to the second opinion program as surgery was averted when professional opinion clearly indicated the need for it, and the behavior patterns of cohort I represent a loss not due to the program, as surgery was not averted when a consultant recommended that it should be. The behavior patterns of cohorts D,F,G, and J (the remaining cohorts listed in Exhibit 2) are considered to reflect compliant behavioral patterns directly attributable to the second opinion program, and the savings reaped from the costs incurred by cohorts F,G, and J compared to cohort D is therefore an estimate of the efficacy of a second opinion consultation program were all patients to follow the consultant's recommendation. Substitution of cohorts D and E for cohort B, and cohorts F,G,H,I, and J for cohort C in equations (1) through (4) permit the disaggregation of total savings into savings directly attributable to the second opinion program, and savings (or losses) attributable to personal (i.e., noncompliant behavior) factors.

Equation (1) can be rewritten as:

$$\text{Benefit} = (D_c + E_c) - (F_c + G_c + I_c + J_c) \qquad (5)$$

where the subscript c indicates cost. Rearranging terms yields:

$$\text{Benefit} = [D_c - (F_c + G_c + J_c)] + (E_c - I_c) \tag{6}$$

The first component of equation (6) -- $D_c - (F_c + G_c + J_c)$ -- indicates savings directly attributable to the program as it represents the cost patterns of the compliant cohorts whose need for surgery was not confirmed (cohorts F,G, and J) contrasted with the control cohort (D). The second component of equation (6) -- $E_c - I_c$ -- reflect savings (or losses) due to noncompliance. If one is interested in estimating savings that can be directly attributed to the second opinion consultation program, equations (2) through (4) can be modified as follows:

$$\text{Benefit/Cost} = \frac{D_c - (F_c + G_c + J_c)}{U_c} \tag{7}$$

$$\text{NPV} = [D_c - (F_c + G_c + J_c)] - U_c \tag{8}$$

$$\text{NPV/P} = \frac{[D_c - (F_c + G_c + J_c)] - U_c}{P} \tag{9}$$

The empirical results presented in the next chapter will be calculated utilizing equations (1) through (4) and (6) through (9) thus presenting both a total and an adjusted cost-benefit analysis, where the adjustment omits savings or losses resulting from noncompliance.

Study Population

Sample Size. As specified in the research contract, the cost-benefit analysis is based on the experience of the largest mandatory second opinion program participating in the Cornell-The New York Hospital second opinion program. The program is administered by the Building Service Local 32B-J Health Fund. The study population represents all covered individuals who were advised to have elective surgery during the period January 1, 1977 to December 31, 1978.

The number of individuals seeking a second opinion (cohort A in Exhibit 2) during this two year period totals 2,284. Of this group, 366 did not have the need for surgery confirmed by a consultant. No medical and work-loss data (to be described below) could be obtained for 24 people in the not confirmed group (cohort C).* Thus these individuals were excluded from the study and the cost-benefit analysis is based on the medical and work-loss experience of 342 not confirmed individuals and a randomly selected group of 342 individuals whose need for surgery was confirmed by a second opinion consultant (cohort B). The number of individuals in each program cohort is reported in Exhibit 3.

It should be noted that the size of the sample cohort, initial recommendation for surgery not confirmed (cohort C), exceeds the size that is required to assert with 95% confidence that the proportion of individuals who are not confirmed for surgery is within 5% of the true proportion of such patients. For this claim to be made, a cohort size of 207 would be required. The current study is based on a cohort C size of 342 cases (individuals).**

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* Health fund files contained no medical claim forms for these individuals and they could not be contacted to complete the cost-benefit questionnaire.

** If p_o is the observed proportion, then

$$p_o - z_{\alpha/2} \frac{p_o\ (1-p_o)}{n} \quad \text{to} \quad p_o + z_{\alpha/2} \frac{p_o\ (1-p_o)}{n}$$

gives an approximate 100 $(1-\alpha)$% confidence interval for the true value of p. For the length of the confidence interval to be .10, i.e., for the calculated proportion to be within $\pm$ .05 of the true value of p, we must have

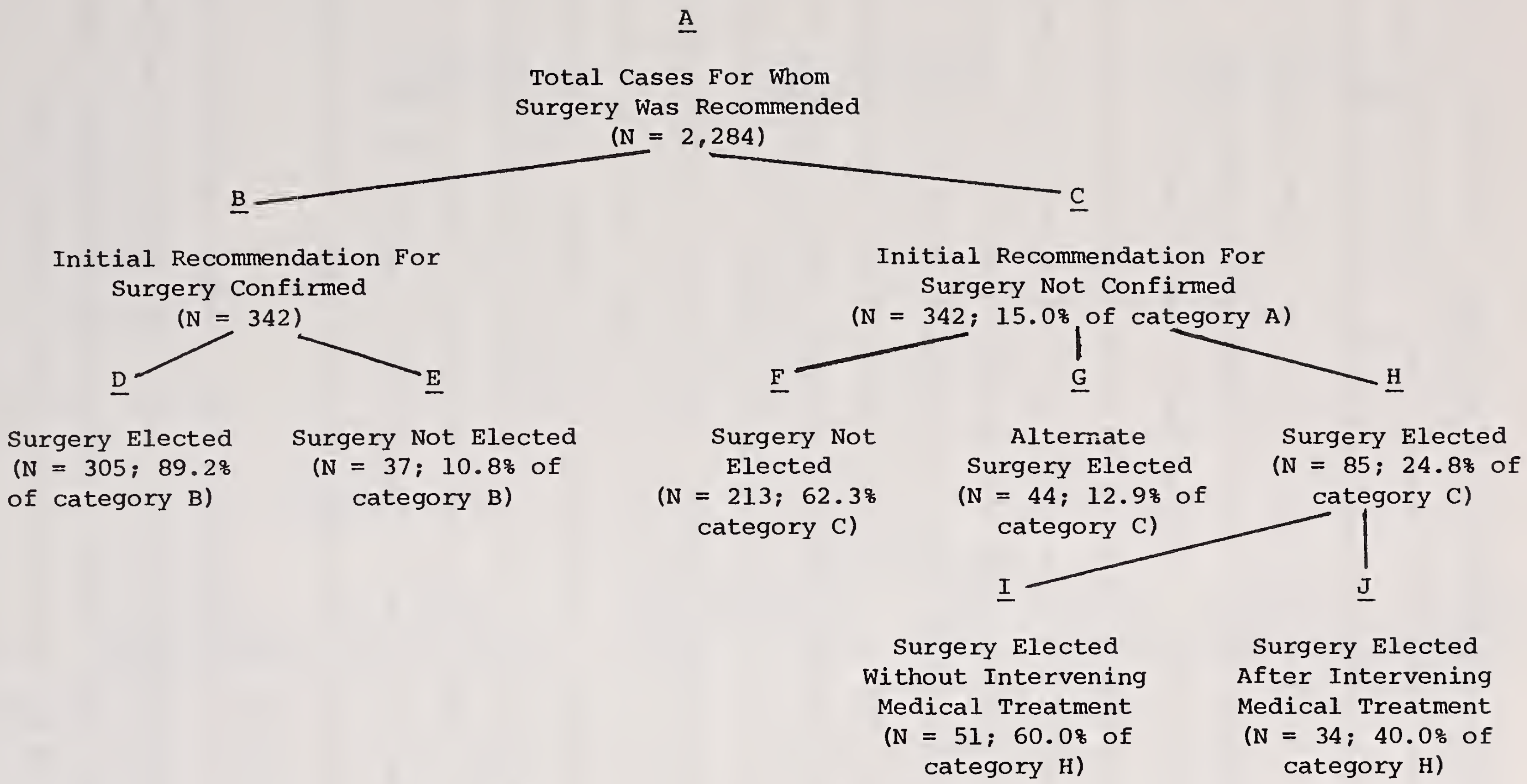
$$p_o - z_{\alpha/2} \frac{p_o\ (1-p_o)}{n} - \left(p_o - z_{\alpha/2} \frac{p_o\ (1-p_o)}{n}\right) = .10$$

or $$z_{\alpha/2} \frac{p_o\ (1-p_o)}{n} = .05$$

In this study p = .16 (366/2,284). For 95% confidence $z_{\alpha/2} = z_{.025} = 1.96$. Solving the above equation yields an n of 207.

EXHIBIT 3

STUDY SAMPLE


A
Total Cases For Whom Surgery Was Recommended (N = 2,284)
B
Initial Recommendation For Surgery Confirmed (N = 342)
C
Initial Recommendation For Surgery Not Confirmed (N = 342; 15.0% of category A)
D
Surgery Elected (N = 305; 89.2% of category B)
E
Surgery Not Elected (N = 37; 10.8% of category B)
F
Surgery Not Elected (N = 213; 62.3% category C)
G
Alternate Surgery Elected (N = 44; 12.9% of category C)
H
Surgery Elected (N = 85; 24.8% of category C)
I
Surgery Elected Without Intervening Medical Treatment (N = 51; 60.0% of category H)
J
Surgery Elected After Intervening Medical Treatment (N = 34; 40.0% of category H)

Socio-Demographic Characteristics of the Sample. The median age category for both the confirmed and not confirmed cohorts included in the study is 45-64 years, as can be seen from the data presented in the top half of Table 50. Approximately 7% of the total study population were in age category 15-24 years, 37% were in age category 25-44, 53% were in age category 45-64 years, and 3% were 65 years of age or older. The confirmed cohort apprears to be slightly older than the not confirmed group, as 59% of confirmed people are 45 years or older, while only 53% of the not confirmed group appear in this age category. Those younger than 15 years were excluded from the cost benefit analysis.

The data presented in the bottom half of Table 50 indicate the age distribution by surgery status of the study sample. Within the confirmed cohort, there is a greater concentration of individuals electing surgery in the last two age categories (45-64 years, and 65 years and over), while the reverse is true for those not electing surgery. That is, 59% of confirmed individuals electing surgery were 45 years of age or over, while only 51% of those confirmed individuals not electing surgery were in this age interval. Among the not confirmed group, a smaller proportion of both those electing surgery after some intervening medical treatment and those not electing surgery are below the age of 45 years than is the case for those electing surgery without any intervening medical care, and for those electing an alternate surgical regimen (approximately 45% versus 55%).

Approximately 52% of the study population are male, and 48% are female, as can be seen from the data presented in Table 51. Within the confirmed cohort, 56% are male and 44% female. Among the confirmed cohort an opposite pattern prevails; 48% are male and 52% are female. Disaggregating the data further by surgery status, the relative distribution of males and females varies within the confirmed cohort by surgery status. Fifty-seven percent of those electing surgery within this cohort were males, while only 46% of those not

TABLE 50

Age Distribution by Second Opinion and Surgery Status

Age	Confirmed		Not Confirmed		Total	
	Number	Percent	Number	Percent	Number	Percent
15-24 years	28	8.2	21	6.2	49	7.2
25-44 years	115	33.6	141	41.2	256	37.4
45-64 years	191	55.9	170	49.7	361	52.8
65 years and over	8	2.3	10	2.9	18	2.6
Total	342	100.0	342	100.0	684	100.0

Age	Confirmed				Not Confirmed							
					Original Surgery							
	Surgery		No Surgery		With Intervening Medical Treatment		Without Intervening Medical Treatment		Alternate Surgery		No Surgery	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
15-24 years	26	8.5	2	5.4	5	14.7	5	9.8	1	2.3	10	4.7
25-44 years	99	32.5	16	43.2	10	29.4	21	41.2	23	52.3	87	40.9
45-64 years	173	56.7	18	48.7	16	47.1	24	47.0	16	36.3	114	53.5
65 years and over	7	2.3	1	2.7	3	8.8	1	2.0	4	9.1	2	0.9
Total	305	100.0	37	100.0	34	100.0	51	100.0	44	100.0	213	100.0

TABLE 51

Sex Distribution by Second Opinion and Surgery Status

Sex	Confirmed		Not Confirmed		Total	
	Number	Percent	Number	Percent	Number	Percent
Male	190	55.6	163	47.7	353	51.6
Female	152	44.4	179	52.3	331	48.4
Total	342	100.0	342	100.0	684	100.0

Sex	Confirmed				Not Confirmed							
	Surgery		No Surgery		Original Surgery				Alternate Surgery		No Surgery	
					With Intervening Medical Treatment		Without Intervening Medical Treatment					
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Male	173	56.7	17	45.9	13	38.2	25	49.0	10	22.7	115	54.0
Female	132	43.3	20	54.1	21	61.8	26	51.0	34	77.3	98	46.0
Total	305	100.0	37	100.0	34	100.0	51	100.0	44	100.0	213	100.0

electing surgery with the confirmed cohort were males. Within the not confirmed group, females predominated in every category that elected surgery, while males predominated in the subgroup not electing surgery.

Seventy-five percent of the study population were currently married and 13% were single, as indicated by the data reported in Table 52. Among those confirmed for surgery 82% were currently married, while only 68% of the not confirmed cohort reported a similar marital state. Six percent of the confirmed were divorced or separated (designated "other" in Table 52), while 17% of the not confirmed group reported a comparable marital state. Currently married individuals were the modal group in every subcategory within the surgery status distribution reported in the lower part of Table 52.

Approximately 67% of all individuals included in the study were employed within the six month period following the second opinion consultation, and an additional 25% reported themselves as homemakers (housewives), as can be seen from the data reported in Table 53. In the aggregate, only 1% of the study population reported that they were unemployed. The remaining individuals (6% of the study population) were students, retirees, or permanently disabled. Employed individuals accounted for roughly two-thirds of those within each surgery status subcategory; the exception being the alternate surgery subcategory, where homemakers predominated.

Almost 50% of both the confirmed and not confirmed populations reported completing less than 12 years of formal schooling, and an additional 14% indicated that they did not know the extent of their educational attainment, as can be seen from the data reported in Table 54. Only 2% of the study population completed college. Comparable educational attainment profiles emerge when individuals are disaggregated by surgery status.

Two-thirds of the employed respondents in both the confirmed and not confirmed cohorts reported gross weekly earnings in the $200-299 range. Only

TABLE 52

Marital Status by Second Opinion and Surgery Status

Marital Status	Confirmed Number	Confirmed Percent	Not Confirmed Number	Not Confirmed Percent	Total Number	Total Percent
Married	280	81.9	234	68.4	514	75.1
Single	41	12.0	49	14.3	90	13.2
Other	21	6.1	59	17.3	80	11.7
Total	342	100.0	342	100.0	684	100.0

Marital Status	Confirmed				Not Confirmed							
	Surgery		No Surgery		Original Surgery				Alternate Surgery		No Surgery	
					With Intervening Medical Treatment		Without Intervening Medical Treatment					
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Married	256	83.9	24	64.9	21	61.8	33	64.7	35	79.5	145	68.1
Single	35	11.5	6	16.2	9	26.5	11	21.6	4	9.1	25	11.7
Other	14	4.6	7	18.9	4	11.7	7	13.7	5	11.4	43	20.2
Total	305	100.0	37	100.0	34	100.0	51	100.0	44	100.0	213	100.0

TABLE 53

Employment Status by Second Opinion and Surgery Status

Employment Status	Confirmed		Not Confirmed		Total	
	Number	Percent	Number	Percent	Number	Percent
Employed	240	70.2	224	65.5	464	67.8
Unemployed	0	-	7	2.0	7	1.0
Homemaker	78	22.8	94	27.5	172	25.2
Other	24	7.0	17	5.0	41	6.0
Total	342	100.0	342	100.0	684	100.0

	Confirmed				Not Confirmed							
	Surgery		No Surgery		Original Surgery				Alternative Surgery		No Surgery	
					With Intervening Medical Treatment		Without Intervening Medical Treatment					
Employment Status	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Employed	215	70.5	25	67.6	21	61.8	32	62.8	20	45.5	151	70.9
Unemployed	0	-	0	-	0	-	2	3.9	0	-	5	2.3
Homemaker	70	23.0	8	21.6	9	26.5	12	23.5	24	54.5	49	23.0
Other	20	6.5	4	10.8	4	11.7	5	9.8	0	-	8	3.8
Total	305	100.0	37	100.0	34	100.0	51	100.0	44	100.0	213	100.0

TABLE 54

Educational Attainment by Second Opinion and Surgery Status

Years of Schooling Completed	Confirmed		Not Confirmed		Total	
	Number	Percent	Number	Percent	Number	Percent
8 or less	51	14.9	56	16.4	107	15.7
9 - 11	121	35.4	111	32.5	232	33.9
12	94	27.5	95	27.8	189	27.6
13 - 15	25	7.3	20	5.8	45	6.6
16	2	0.6	9	2.6	11	1.6
More than 16	2	0.6	1	0.3	3	0.4
Unknown	47	13.7	50	14.6	97	14.2
Total	342	100.0	342	100.0	684	100.0

Years of Schooling Completed	Confirmed				Not Confirmed							
	Surgery		No Surgery		Original Surgery				Alternative Surgery		No Surgery	
					With Intervening Medical Treatment		Without Intervening Medical Treatment					
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
8 or less	45	14.7	6	16.2	2	5.9	6	11.8	7	15.9	41	19.3
9 - 11	112	36.7	9	24.3	14	41.2	17	33.3	12	27.3	68	31.9
12	85	27.9	9	24.3	12	35.3	9	17.6	10	22.7	64	30.0
13 - 15	19	6.2	6	16.2	5	14.7	5	9.8	2	4.6	8	3.8
16	2	0.7	0	-	0	-	3	5.9	0	-	6	2.8
More than 16	0	-	2	5.4	0	-	0	-	0	-	1	0.5
Unknown	42	13.8	5	13.6	1	2.9	11	21.6	13	29.6	25	11.7
Total	305	100.0	37	100.0	34	100.0	51	100.0	44	100.0	213	100.0

3% reported earning less than $100 per week, as can be seen from the data reported in Table 55. Comparable patterns emerge when study participants are profiled by surgery status. It is interesting to note that within the two "original surgery" subcategories for the not confirmed cohort, there appears to be a relationship between earnings and the election of surgery without attempting some medical treatment when the need for surgery was not confirmed by the consultant physician. Approximately 33% of those electing surgery, after a nonconfirmation, who obtained some intervening medical treatment earned less than $200 a week. Of the group electing surgery without any intervening medical care, 44% earned less than $200 a week.

Diagnostic Characteristics of the Sample. Of the 30 diagnostic categories, only the category "all other" accounted for more than 10% of the total (12.9%). Only five diagnostic categories accounted for at least 5% of the cases where elective surgery was initially recommended. These diagnoses, and their percent of the total, are: other eye surgery* - 9.3%; hernia repair, and other mass, cyst, or lesion** - 8.8%, respectively; hysterectomy - 7.4%; and dilatation and curettage - 5.4%. Cumulatively, these five diagnostic categories accounted for 39.7% of all elective procedures initially recommended for surgery. In 16 of the 30 categories reported in Table 56, there is a difference between confirmed and not confirmed cell sizes of at least 50% (e.g., either the number of confirmed individuals exceeds or falls short of the number of not confirmed individuals by a factor of at least 1.5).

Comparable patterns emerge when the study population is disaggregated by surgery status, as can be seen from the data reported in Table 57. Three interesting phenomenon worthy of note emerge from this data display. First, approximately 25% of those individuals advised to have "other eye surgery"

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* all eye surgery except for extracting of the lens

** surgery on a mass, cyst, or lesion on parts of the body other than the skin

TABLE 55

Gross Weekly Salary by Second Opinion and Surgery Status

Gross Weekly Salary	Confirmed		Not Confirmed		Total	
	Number	Percent	Number	Percent	Number	Percent
Less than $100	8	3.3	7	3.1	15	3.2
$100 - $199	51	21.3	63	28.1	114	24.6
$200 - $299	167	69.6	145	64.8	312	67.2
$300 and over	14	5.8	9	4.0	23	5.0
Total	240	100.0	224	100.0	464	100.0

Gross Weekly Salary	Confirmed				Not Confirmed							
	Surgery		No Surgery		Original Surgery				Alternative Surgery		No Surgery	
					With Intervening Medical Treatment		Without Intervening Medical Treatment					
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Less than $100	7	3.3	1	4.0	0	-	2	6.2	3	15.0	2	1.3
$100-$199	44	20.5	7	28.0	7	33.3	12	37.5	3	15.0	41	27.2
$200-$299	151	70.2	16	68.0	13	61.9	18	56.3	12	60.0	102	67.5
$300 and over	13	6.0	1	4.0	1	4.8	0	-	2	10.0	6	4.0
Total	215	100.0	25	100.0	21	100.0	32	100.0	20	100.0	151	100.0

TABLE 56

Diagnoses by Second Opinion Status

Diagnostic Category	Confirmed				Not Confirmed				Total			
	Number		Percent		Number		Percent		Number		Percent	
Heart Surgery	3		0.9		5		1.5		8		1.2	
Cholecystectomy	11		3.2		5		1.5		16		2.4	
Gastrointestinal (Upper and Lower)	6		1.7		3		0.9		9		1.3	
Hemorrhoidectomy	5		1.5		7		2.0		12		1.8	
Incision, Excision, and Suture for Mass, Cyst, or Lesion of the Skin	25		7.3		8		2.3		33		4.8	
Mastotomy, Mastectomy, and Other Operations of the Breast	12		3.5		12		3.5		24		3.5	
Hernia Repair	45		13.2		15		4.4		60		8.8	
Thyroidectomy	1		0.3		2		0.6		3		0.4	
Varicose Vein Excision and Ligation	13		3.8		7		2.0		20		2.9	
Other Mass, Cyst, or Lesion	34		9.9		26		7.6		60		8.8	
Dilation and Curettage	20		5.8		17		5.0		37		5.4	
Hysterectomy, not radical	2	15	0.6	4.4	1	36	0.3	10.5	3	51	0.4	7.4
Hysterectomy, radical	1		0.3		7		2.0		8		1.2	
Hysterectomy, other	12		3.5		28		8.2		40		5.8	
Removal of Cataract	14		4.1		11		3.2		25		3.6	
Other Eye Surgery	31		9.1		33		9.7		64		9.3	
Bunionectomy	11		3.2		7		2.0		18		2.6	
Other Foot Surgery	3		0.9		23		6.7		26		3.8	
Excision of Intervertebral Disc	1		0.3		1		0.3		2		0.3	
Other Vertebral Column Surgery	0		-		2		0.6		2		0.3	
Hand Surgery	3		0.9		7		2.0		10		1.5	
Hip Surgery	2		0.6		0		-		2		0.3	
Knee Surgery	8		2.3		7		2.0		15		2.2	
Other Bone and Joint Surgery	2		0.6		14		4.1		16		2.3	
Other Operations on Fascia, Tendons, or Muscles	1		0.3		2		0.6		3		0.4	

TABLE 56 (cont'd)

Diagnoses by Second Opinion Status

Diagnostic Category	Confirmed		Not Confirmed		Total	
	Number	Percent	Number	Percent	Number	Percent
Deviated Septum	11	3.2	16	4.7	27	3.9
Ear Surgery	5	1.5	7	2.0	12	1.8
Tonsillectomy with and without Adenoidectomy	8	2.3	2	0.6	10	1.5
Operations on the Kidney	4	1.2	4	1.2	8	1.2
Operations on the Bladder	6	1.8	5	1.5	11	1.6
Prostatectomy	7	2.0	5	1.5	12	1.8
All Other Surgeries	35	10.2	53	15.5	88	12.9
Total	342	100.0	342	100.0	684	100.0

TABLE 57

Diagnoses by Second Opinion and Surgery Status

	Confirmed				Confirmed				Not Confirmed			
	Surgery		No Surgery		Original Surgery				Alternate Surgery		No Surgery	
					With Intervening Medical Treatment		Without Intervening Medical Treatment					
Diagnostic Category	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Heart Surgery	3	1.0	0	-	0	-	0	-	0	-	5	2.4
Cholecystomy	10	3.3	1	2.7	1	2.9	1	2.0	0	-	3	1.4
Gastrointestinal (Upper & Lower)	4	1.3	2	5.4	1	2.9	0	-	0	-	2	0.9
Hemorrhoidectomy	4	1.3	1	2.7	0	-	1	2.0	3	6.8	3	6.8
Incision, Excision, & Suture for Mass, Cyst, or Lesion of the Skin	22	7.2	3	8.1	0	-	1	2.0	0	-	7	3.3
Mastotomy, Mastectomy & Other Operation of the Breast	10	3.3	2	5.4	0	-	3	5.9	0	-	9	4.2
Hernia Repair	42	13.8	3	8.1	1	2.9	3	5.9	0	-	11	5.2
Thyroidectomy	1	0.3	0	-	0	-	1	2.0	0	-	1	0.5
Varicose Vein Excision & Ligation	12	3.9	1	2.7	1	2.9	2	3.9	1	2.3	3	1.4
Other Mass, Cyst, or Lesion	31	10.2	3	8.1	1	2.9	2	3.9	1	2.3	22	10.3
Dilation & Curettage	17	5.6	3	8.1	2	6.0	2	3.9	6	13.5	7	3.3
Hysterectomy, not radical	2	0.7	0	-	0	-	0	-	0	-	1	0.5
Hysterectomy, radical	1	0.3	0	-	0	-	1	2.0	2	4.6	4	1.9
Hysterectomy, other	12	3.9	0	-	1	2.9	3	5.9	15	34.0	9	4.2
Removal of cataract	14	4.6	0	-	3	8.8	0	-	2	4.6	6	2.8
Other Eye Surgery	22	7.2	9	24.4	4	11.9	0	-	1	2.3	28	13.2
Bunionectomy	9	2.9	2	5.4	1	2.9	2	3.9	2	4.6	2	0.9
Other Foot Surgery	3	1.0	0	-	1	2.9	4	7.8	2	4.6	16	7.5

TABLE 57 (cont'd)

Diagnoses by Second Opinion and Surgery Status

Diagnostic Category	Confirmed				Confirmed				Not Confirmed			
					Original Surgery				Alternate Surgery		No Surgery	
	Surgery		No Surgery		With Intervening Medical Treatment		Without Intervening Medical Treatment					
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Excision of Intervetebral Disc	1	0.3	0	-	0	-	0	-	0	-	1	0.5
Other Vertebral Column Surgery	0	-	0	-	0	-	0	-	0	-	2	0.9
Hand Surgery	3	1.0	0	-	2	6.0	2	3.9	1	2.3	2	0.9
Hip Surgery	2	0.7	0	-	0	-	0	-	0	-	0	-
Knee Surgery	8	2.6	0	-	0	-	1	2.0	0	-	6	2.8
Other Bone and Joint Surgery	2	0.7	0	-	1	2.9	4	7.8	0	-	9	4.2
Other Operations on Fascia, Tendons, or Muscles	1	0.3	0	-	0	-	0	-	0	-	2	0.9
Deviated Septum	11	3.6	0	-	1	2.9	4	7.8	0	-	11	5.2
Ear Surgery	5	1.6	0	-	1	2.9	2	3.9	0	-	4	1.9
Tonsillectomy with and without Adenoidectomy	6	2.0	2	5.4	1	2.9	0	-	0	-	1	0.5
Operations on the Kidney	4	1.3	0	-	2	6.0	2	3.9	0	-	0	-
Operations on the Bladder	6	2.0	0	-	1	2.9	1	2.0	0	-	3	1.4
Prostatectomy	6	2.0	1	2.7	0	-	0	-	2	4.6	3	1.4
All Other Surgeries	31	10.1	4	10.8	8	23.6	9	17.6	6	13.5	30	14.1
Total	305	100.0	37	100.0	34	100.0	51	100.0	44	100.0	213	100.0

by both the first contact physician and the consultant physician, elected not to have the surgery. Second, no single diagnostic category accounts for more than 7.8% of the not confirmed, original surgery elected without intervening medical treatment cases. Third, over a third of the cases where alternate surgery was recommended by the second opinion physician were hysterectomies.

Data Base and Data Elements

Data Base. The administrative costs of the Cornell-New York Hospital second opinion program were obtained from records maintained by the 32B-J Health Fund. All other required data were abstracted from one of six data forms. These forms, and their contents are described below. A copy of each form appears in Appendices, C,E or F.

1. Building Service 32B-J Health Fund Presurgical Screening Program Intake Form. This form, routinely completed by the Health Fund intake officer and maintained as part of the Health Fund's files, contains data on the patient's age, sex, health fund status (i.e., member, spouse, dependent), surgical procedure initially recommended by the first contact physician, and the date of the appointment for the second opinion consultation.

2. Building Service 32B-J Health Fund Presurgical Screening Consultant Form. This form, completed by the consultant physician and maintained as part of the Health Fund's files, indicates the date of the second opinion consultation, the consultant's confirmation (or lack of confirmation) of the initially suggested surgery, and the consultant's recommendation on whether an additional surgical or medical consultation is required.

3. Building Service 32B-J Health Fund Claim Form for Surgical Operation Benefits - Anesthesia Benefits - and Major Medical Benefits. This form details physician charges, procedures performed, diagnoses, and the anatomical site where surgery is performed. Attached to this form, and also maintained

in the Health Fund's permanent files, is a copy of the physician's bill.

4. Blue Cross Paid Case Registry. This report, which the Health fund receives monthly from Blue Cross, details admission date, length of stay, and dollar amount paid for each covered hospitalization episode (i.e., for each patient covered by the Health Fund). Cost and utilization data on emergency room use and ambulatory surgery for each claimant are also provided on this monthly report.

5. Cornell-New York Hospital Second Opinion Program Follow-Up Questionnaires. Participants in the second opinion program are asked to respond to two questionnaires in the first year after their consultation. The first (follow-up) questionnaire, is administered six months after the second opinion consultation. The second (follow-up) questionnaire is administered one year after the second opinion consultation. Participants in the second opinion program are asked questions about their election of surgery, medical care and hospital utilization and expenditures, and employment status, and where pertinent, restricted activity.

6. Cornell-New York Hospital Second Opinion Program Cost-Benefit Questionnaire. This questionnaire, administered at the same time as the second follow-up questionnaire, elicits detailed data on earnings, employment, restricted household activities, educational attainment, medical resource utilization and cost, and out-of-pocket (i.e, travel) costs for obtaining medical care.

In generating the data base for this study, extreme care was exercised in ensuring that medical utilization, work-loss, and restricted activity data related only to the condition for which surgery was originally recommended were included. Medical utilization, employment, and restricted activity data resulting from other causes were excluded from the study.

In many cases, the same data elements appear (are requested) on more than one form. This overlap was intentional. In instances where conflicting responses emerge, health fund permanent file data were selected over responses elicited through questionnaires. Where questionnaire data conflict, individuals were contacted to clarify the difference.

Ninety-two percent of the study population (629 people) responded to all the study questionnaires. An additional thirty-three individuals (4.8%) responded to the utilization questionnaires but refused to respond to the cost-benefit questionnaire. Twenty-two individuals (3.2%) refused to respond to any questionnaire. As claim form data were available for both groups of non-responders, it was decided to include them in the study and proxy the missing data in the manner described below.

Data Elements. With the exception of the administrative, and out-of-pocket cost data, all data elements available for use in the cost-benefit analysis are listed in Exhibit 4.

At times individuals could not or would not provide specific responses to some questions on the cost-benefit questionnaire. Based on the information that was imparted by the patient, the value of the missing data element was proxied. In other cases, specific market values do not exist for certain phenomena, such as restricted activity days. Proxy values were derived for such losses in order to give some recognition to the value of time.

Where precise data was not given on the cost of office based physician visits, the price of such visits was proxied at $30/visit. This proxy value was selected as it represented the prevailing office visit charge in the New York City area during the time of the study. In all cases, hospital costs were estimated based on the prevailing Blue Cross per diem reimburse-

EXHIBIT 4

COST-BENEFIT ANALYSIS DATA ELEMENTS

Patient Related Data

Age
Sex
Marital status
Health fund status
Occupation
Educational attainment
Acceptance of consultant's recommendation
Reason for surgery if need not confirmed by consultant

Medical Data

Intake diagnosis
Confirmation of need for surgery
Consultant's recommendation if need for surgery is not confirmed
Date of consultation
Additional second (i.e., third) opinion
Date of surgery
Type of surgery performed (original or alternate surgery)
Surgical procedure(s) performed
Location of surgery (inpatient, outpatient, office)
Number of related surgeries
Elapsed weeks between consultation and surgery
Inhospital physician visits
Office based physician visits
Number of hospital stays
Length of hospital stays

Medical Expenditures Data

Cost of second opinion consultation
Cost of additional (i.e., third) opinion consultation
Cost of physician visits
Surgeon's fees
Anesthesiologist's fees
Cost of hospital care (Blue Cross reimbursement)
Diagnostics and laboratory costs
Drug costs
Therapy costs
Travel costs for obtaining medical care

Work and Activity Loss Data

Employment status
Number of employed household members
Weekly salary*
Hours worked per week*
Work-loss days*
Overtime payment rate*
Amount of overtime work loss*
Restricted activity days (for those not employed)
Cost of outside household help

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* Data for each employed household member, and relative (if applicable) for each job (main and additional jobs).

ment. Hospital charge data were not used since charges overestimate the true cost of rendering hospital care. As the Blue Cross policy offered by the Health Fund provides full coverage for the first 21 days of a hospital stay and half coverage for the succeeding 180 days, the Blue Cross payment for care beyond the twenty-first day was doubled. Charges for medically related services not covered by Blue Cross, such as the cost of blood, were added to the reimbursement revenue to obtain the aggregate cost of hospital care.

In cases where a specific drug cost was not provided, but the respondent reported the type of drug prescribed and the frequency and duration of intake, drug costs were proxied using prices listed in the Lily Drug Directory. In the case of eye surgery, the cost of eye drops was proxied at $1 per month; the cost of eye glasses at $75/pair, and the cost of contact lenses at $250/pair. These estimates were based on expert medical opinion.

If salary or wage data were not reported, they were proxied. For Building Service union members, collective bargaining hourly wages for the pertinent occupational category were used. For non Building Service spouses, proxies were derived from Bureau of Labor Statistics regional wage reports. Responses to questions seeking to ascertain the extent of overtime often lacked precision. A proxy value of eight overtime hours per month was used for responses such as "sometimes", "every so often", "once in a while". When the rate of overtime pay was not given, a proxy value of one and a half times the base wage was used.

The proxy measure used to value homemaker (housewife) time was based on the market valuation of homemaker services generated by Wendyce Brody.[6] Brody estimated the annual value of housewife services in 1972 as $4,705. This estimate was based on market wages prevailing in the Syracuse, New York area. Bureau of Labor Statistics wage level indices were used to: (a) adjust the data to reflect wage patterns prevailing in the New York City region, and (b) inflate 1972 data to reflect market values prevailing during the current study period. The sum of both of these adjustments yielded a proxy value for housewife services of $133/week in 1977.

The prevailing minimum wage was used to value the restricted activity time of students, retirees, permanently disabled and laid off or unemployed individuals. If an individual's employment status changed during the study period (i.e., person retired, was laid off, etc.), the value of his/her lost time (i.e., actual or minimum wage) was determined by the employment status at the time the loss occurred.

Two proxies were required in estimating program cost. The time required to travel to and from the consultant's office as well as time spent in the doctor's office was proxied at two hours. The cost of automobile travel was proxied at fifteen cents/mile.

In instances where the respondents furnished no information for specific items, and direct proxies could not be imputed, responses were coded as "unknown" and the mean value for each cohort (cohorts D-J in Exhibit 2) for that given data element were used as proxies.

Data Base Biases. Factors unique to the Health Fund study population and to the New York City health care system introduce a downward bias in some of the cost data utilized in this study. Specifically, surgeon and physician visit costs may be biased in a downward direction due to three factors: (1) the Health Fund's surgical fee negotiation program, (2) the availability of "panel" surgeons, and (3) the billing practices of the Health Fund's health center. The surgical fee negotiation program attempts to obtain reductions in surgical fees in cases where the surgeon accepts assignment and his fee exceeds the health fund's stipulated reimbursement for any procedure.[7] Under this program, surgeons are intially requested to accept the health fund's reimbursement as payment in full, or if this is not acceptable, to voluntarily reduce their fee. In 7.7% of the surgical cases included in the cost-benefit study, the surgeon's fee initially exceeded the health fund's allowable scale, and negotiation occurred.

Some individuals electing surgery may have used a "panel" surgeon. If a beneficiary, once having gone for a second opinion consultation, does not have a surgeon to perform the elective surgery, the health fund will arrange for a "panel" surgeon to perform the surgery. Panel surgeons are board certified and agree to accept the health fund's designated reimbursement. Furthermore, panel members are not permitted to bill the Health Fund or the beneficiary for routine post-operative medical care [5.7% of the people electing surgery had their surgery performed by a panel surgeon].

Building Service Local 32B-J also operates a health center for its members. Fees at the Health Center are lower than those prevailing in the city at large (e.g., the cost of a physician visit is only $25). If a patient originates at the health center (the condition for which the second opinion was diagnosed at the health center) and continues to receive medical care there, the health fund will pay 80% of the medical bill after the annual $100 deductible is met. Frequently, health center physicians fail to bill the patient for the remaining 20%. When this occurs, the amount of the 20% co-payment is not included in the data utilized in this study.

New York City has the largest network of municipal hospitals in the nation. Although municipal hospitals are frequently thought of as places treating only the poor, they do render a substantial amount of care to the working population of the city. Two biases are introduced if care was obtained in the municipal system. Cost of outpatient department care may be biased downward as charges for such care are based on the patient's ability to pay. Furthermore, when a patient is hospitalized in a municipal hospital, he/she is treated by a salaried surgeon who is not permitted to bill the patient for this care. The cost of these services are presumably part of the total hospital bill. The same applies to the cost of anesthesiology.

A comparable situation exists when the patient was hospitalized in one of the city's major teaching hospitals. If the patient is placed on the teaching, as opposed to the private service, a separate surgeon's charge is not forthcoming because the cost of medical and surgical care is presumably included in the aggregate hospital bill. Finally, in a number of cases, anesthesiologists did not bill the patient directly but included his/her fees as part of the surgeon's bill. In such cases (n=61) the cost of surgical care is overestimated and the cost of anesthesiology care is underestimated.

The net effect of all these biases probably leads to an underestimate of the true savings of the second opinion program. The major impact of these biases is to reduce the cost of surgery thereby underestimating program benefit. One should recognize that comparable biases would result in any study focused either on an urban lower class working population or on special population groups such as Medicare and Medicaid patients, where payment for care may be below prevailing physician charges.

Time Frame. Patient intake into the second opinion program began on January 1, 1977 and terminated on December 31, 1978. A two year intake period was selected in order to assure sufficient intake to reach a study population of approximately 700 individuals, as called for in the HCFA contract.

Each patient included in the cost-benefit analysis was followed for a period of one year following his/her second opinion consultation. As entry into the study spanned a two year period, and persons entering at the end of study were followed for a full year, cost data utilized in the study spanned a three year period -- 1977 through 1979. All 1978 and 1979 cost data were discounted to a 1977 base. Three different discount rates were selected for the analysis -- 10%, 15%, and the actual rate at which wages and medical costs rose in the New York City area during the study, which is approximately 6%.* It is our considered opinion that 10% represents the appropriate discount rate, and as such is used for the ensuing analysis. Benefit-cost ratios derived by using the 15% and 6% rate are reported and constitute lower and upper bounds for the cost-benefit analysis.

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* The medical care component of the CPI for the New York - Northern New Jersey metropolitan area rose 6.03% from 1977 to 1978 and 7.48% from 1978 to 1979. Local 32B-J wages rose 5.46% from 1977 to 1978 and an additional 6.42% from 1978 to 1979. Non-union wages for office workers and nonskilled plant workers rose 5.9% from 1977 to 1978. As 1979 wage data were not yet available when the analysis was being conducted, 5.9% was used as the proxy for the 1978 - 1979 change.

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Chapter 6

Cost-Benefit Analysis -- Empirical Findings

Introduction

The results of the cost-benefit evaluation of the Cornell-New York Hospital second opinion program are presented in this chapter. The cost-benefit analysis is based upon the conceptual modeling of the second opinion program presented in the previous chapter. In order to gain a more complete understanding of the program's efficacy, the economic benefits (i.e., cost savings) resulting from the program are detailed and discussed in the first part of this chapter. This is followed by an analysis of the cost of the program, and the cost-benefit calculations, respectively. The findings are summarized and discussed in the last section.

Program Benefit

Resources saved by the avoidance of surgery constitute the economic measure of the program's success. These savings are ascertained by comparing the total cost profiles generated by confirmed and not confirmed individuals. Two types of resource savings are pertinent for the current study: savings resulting from a reduced utilization of medical resources, and savings resulting from incurring fewer work-loss and restricted activity days. Each type of savings will be analyzed below. In both cases, savings will be reported in terms of actual units and their dollar valuation. In analyzing changes in expenditures over time, one must adjust for the deflation in the value of the dollar. A 10% discount rate was used to deflate 1978 and 1979 cost data to a 1977 (constant) dollar base.

Medical Resource Savings. Nine medical resource cost categories were delineated for this study. They are: physician visits, hospital utilization, surgical fees - original surgery, anesthesia fees - original surgery, surgical fees - related surgery, anesthesia fees - related surgery, diagnostics and laboratory, therapies and nursing, and drugs and prostheses.* In addition, data are available on the number of physician visits, number of hospitalizations, total number of days of hospital care rendered, and number of surgeries performed. As noted in the previous chapter, savings are determined by comparing the experience of not confirmed individuals with a randomly selected group of confirmed individuals. For each group, total and average (i.e., mean) utilization and expenditures are reported. Mean cost and utilization data are reported on a cohort rather than a utilizer basis. That is, individuals belonging to any cohort who did not utilize a particular type of service are still included in the number of observations pertinent to that cohort.** Consequently, standard deviations exceed means in just about every row of the ensuing tables. Although means are not directly utilized in calculating any of the cost-benefit statistics, they are reported as they are required for tests of significance, and they facilitate comparisons between groups.

Medical resource utilization and cost patterns displayed by the not confirmed (cohort C) and confirmed (cohort B) groups are reported in Tables 58 and 59. As can be seen from the data in Table 58, the not confirmed cohort averaged three physician visits per person in the year following the second opinion consultation, and the confirmed cohort averaged three and one-half physician visits per person. Of the 342 not confirmed individuals,

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* In most cases related surgery is a surgical procedure associated with the diagnosis for which a second opinion was sought. It is not, however, the procedure that was initially recommended. For example, the procedure initially recommended was dilation and curretage. This procedure was performed and subsequently a hysterectomy was required. In other cases, related surgery refers to a diagnostic procedure, such as scoping, which is performed in a hospital under anesthesia, and is done as a prelude to surgery.

** Cost per utilizer data reflect service fees for a given volume of services. While of interest, such data would not indicate expected cost in an actuarial sense, which average cost per cohort data do. The latter type of statistic is deemed to be of greater interest to those assessing the cost saving potential of a second opinion consultation program.

TABLE 58

Medical Resource Utilization Profiles -- Confirmed and Not Confirmed Cohorts

Category	Confirmed (Cohort B; N = 342)			Not Confirmed (Cohort C; N = 342)		
	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Number of Physician Visits	1,206	3.5	7.1	1,077	3.1	6.6
Number of Hospital Stays	325	0.9	0.6	151	0.4	0.6
Length of Stay - All Hospitalizations	2,130	6.2	7.7	1,206	3.5*	7.0
Number of Surgeries(1)	396	1.2	0.8	193	0.6*	0.9

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(1) This category includes the surgical procedures for which the individual received a second consultation (called original surgery) and all other surgical episodes related to the medical condition for which a second opinion consultation was sought.

* Statistically significant from the mean value reported for the confirmed cohort at $p \leq 0.01$.

151 experienced a hospital stay during the study year, while 325 of the 342 confirmed individuals had a hospital stay during a comparable one year period. However, the differences between confirmed and not confirmed cohort use of physician and hospital resources were not siginficant at conventional levels (i.e., $p \leq 0.05$). Statistically significant differences do emerge with regard to the length of hospital stays and number of surgeries. For both of these phenomena average use by the confirmed cohort was almost double that of the not confirmed cohort -- 6.23 versus 3.51 hospital days, and 1.15 versus 0.56 surgeries.

In the aggregate, medical resource cost patterns exhibited by the confirmed and not confirmed cohorts displayed dramatic and significant differences, as can be seen from the data presented in Table 59. Total medical care expenditures incurred by the not confirmed cohort equalled $425,538 contrasted with $787,294 for the confirmed cohort. Viewed from another perspective, average medical care cost per cohort member was $1,244 for the not confirmed group and $2,302 for the confirmed group. As expected, two categories account for the majority of medical care expenditures for both cohorts. These categories are: hospital utilization and surgical fees - original surgery. Jointly they account for 84.1% of the expenditures incurred by the confirmed cohort and 79.3% of the expenditures incurred by the not confirmed cohort. On a per cohort member basis differences in mean expenditures for hospital utilization were $635 ($1,348 - $713) and differences in mean expenditures for surgical fees - original surgery were $324 ($601 - $277). It is interesting to note that statistically signigicant differences in cohort expenditures appear for two additional medical resource categories -- anesthesiology fees - original surgery and therapies and nursing. In both cases, expenditures incurred by the confirmed cohort exceeded those incurred by the not confirmed cohort.

Comparable data profiles are presented in Tables 60 and 61 for the subdivisions of the confirmed and not confirmed cohorts that followed the recommendation of the consultant physician. These subgroups are: initial recommendation for surgery confirmed and surgery elected (labelled "confirmed, surgery" in Table 60) and initial recommendation for surgery not confirmed and either surgery not elected, alternate surgery elected, or surgery elected after intervening medical treatment (labelled "not confirmed, consultant's recommendation followed" in Table 60). These groups correspond to cohort D and cohorts F, G, and J presented in Exhibit 2 (chapter 5). On average, the confirmed, surgery cohort registered 3.7 physician visits per person during the year following the second opinion consultation, while the not confirmed, consultant's recommendation followed cohorts had 3.3 physician visits per person during a comparable time period. On average, individuals in the confirmed, surgery cohort had 1.1 hospital stays during the follow-up year, while individuals in the not confirmed, consultant's recommendation followed cohorts had 0.3 hospital stays. Neither physician nor hospital utilization differences, however, are statistically significant at $p \leq 0.05$.

Statistically significant differences do emerge with regard to length of hospital stays and number of surgeries. On average, individuals in the confirmed, surgery cohort spent 7.0 days in a hospital during the follow-up year, while individuals in the not confirmed, consultant's recommendation followed cohorts spent only 2.8 days in a hospital. Mean number of surgeries per cohort member for the not confirmed, consultant's recommendation followed groups was 0.5*; for the confirmed,surgery group it was 1.3.

Average per person medical care expenditures in the year following the second opinion consultation were $2,566 for the confirmed, surgery group and $1,009 for the not confirmed groups following the consultant's recommendation,

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* Seventy-eight people in these cohorts, out of a total of 291, had either an alternate surgical procedure (n=44) or had the original surgical procedure performed after intervening medical care (n=34).

TABLE 59

Medical Resource Cost Profiles -- Confirmed and Not Confirmed Cohorts

Category	Confirmed (Cohort B; N = 342)			Not Confirmed (Cohort C; N = 342)		
	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Physician Visits	$31,074	$91	207	$27,902	$82	185
Hospitalization	460,979	1,348	2,013	243,819	713*	1,604
Surgical Fees - Original Surgery	200,068	601(1)	496	92,844	277(3)*	479
Anesthesiology Fees - Original Surgery	50,342	185(2)	131	20,692	68(4)*	134
Surgical Fees - Related Surgery	15,661	46	217	21,090	62	329
Anesthesiology Fees - Related Surgery	4,343	13	61	4,827	14	62
Diagnostics and Laboratory	10,446	31	166	5,361	16	54
Therapies and Nursing	7,447	22	162	1,368	4**	38
Drugs and Prostheses	6,934	20	92	7,635	22	173
TOTAL COST	$787,294	$2,302	2,741	$425,538	$1,244*	2,427

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(1) The number of observations used to calculate this mean was 333. Nine individuals in this cohort did not have separate, identifiable, surgical bills.

(2) The number of observations used to calculate this mean was 272. Seventy individuals in this cohort either did not incur any anesthesiology costs or did not have separate bills for anesthesiology.

(3) The number of observations used to calculate this mean was 334. Eight individuals in this cohort did not have separate, identifiable, surgical bills.

(4) The number of observations used to calculate this mean was 306. Thirty six individuals in this cohort either did not incur any anesthesiology costs or did not have separate bills for anesthesiology.

* Statistically significant from the mean value reported for the confirmed cohort at $p \leq 0.01$.

** Statistically significant from the mean value reported for the confirmed cohort at $p \leq 0.05$.

TABLE 60

Medical Resource Utilization Profiles -- Confirmed, Surgery and Not Confirmed, Consultant's Recommendation Followed Cohorts

Category	Confirmed, Surgery (Cohort D; N = 305)			Not Confirmed, Consultant's Recommendation Followed (Cohorts F,G,J; N = 291)		
	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Number of Physician Visits	1,131	3.7	7.3	949	3.3	7.0
Number of Hospital Stays	324	1.1	0.5	100	0.3	0.6
Length of Stay - All Hospitalizations	2,219	7.0	7.8	815	2.8*	6.4
Number of Surgeries (1)	395	1.3	0.7	131	0.5*	0.9

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(1) This category includes the surgical procedures for which the individual received a second consultation (called original surgery) and all other surgical episodes related to the medical condition for which a second opinion consultation was sought.

* Statistically significant from the mean value reported for the confirmed, surgery cohort at $p \leq 0.01$.

as can be seen from the data presented in Table 61. The difference between these two sample means is statistically significant at $p \leq 0.01$. The largest medical care expenditures (over 50% of the total) were incurred for hospital care. Average per capita cohort expenditures for this care element were $1,511 for the confirmed, surgery cohort and $568 for the not confirmed, consultant's recommendation followed cohorts. (The difference between these means is statistically significant at $p \leq 0.01$). Differences in average cohort expenditures for surgical and anesthesiology fees incurred for the original surgery were also statistically significant at $p \leq 0.01$. On average, individuals in the confirmed, surgery cohort incurred surgical costs of $676 and anesthesiology costs of $214, while the comparable average expenditures for the not confirmed. consultant's recommendation followed cohorts were $212 and $42, respectively.

Although not proposed as a frame of reference for cost-benefit modeling, a comparison of the utilization and cost experience of the confirmed, surgery and the not confirmed, no surgery groups, labelled cohort D and cohort F in Exhibit 2, is of interest. Data on medical resource utilization incurred by these groups is presented in Table 62. Statistically significant differences (at the 0.01 level) emerge in three of the four categories for which utilization data are reported. These categories are: number of hospital stays, length of hospital stays, and number of surgeries. Although not reflected in the data reported in Table 62, it is noteworthy that 52% of the not confirmed, no surgery cohort had no medical care utilization during the follow-up year.

Medical care costs incurred by these cohorts are reported in Table 63. Average medical care expenditures for the not confirmed, no surgery cohort in the follow-up year were $229 contrasted with $2,566 for the confirmed, surgery cohort. The difference between these means is statistically significant at $p \leq 0.01$. In only two of the nine categories for which cost data are reported -- physician visits, and drugs and prostheses -- were mean expenditures per

TABLE 61

Medical Resource Cost Profiles -- Confirmed, Surgery and Not Confirmed, Consultant's Recommendation Followed Cohorts

	Confirmed, Surgery (Cohort D; N =305)			Not Confirmed, Consultant's Recommendation Followed (Cohorts F,G,J; N = 291)		
Category	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Physician Visits	$29,168	$96	214	$24,398	$84	197
Hospitalization	460,796	1,511	2,074	165,231	568*	1,432
Surgical Fees - Original Surgery	200,068	676(1)	476	61,661	212(3)*	457
Anesthesiology Fees - Original Surgery	50,342	214(2)	117	12,258	42(4)*	105
Surgical Fees - Related Surgery	15,661	51	230	16,112	55	270
Anesthesiology Fees - Related Surgery	4,343	14	65	4,034	14	60
Diagnostics and Laboratory	9,590	31	174	4,409	15	54
Therapies and Nursing	7,447	24	172	1,368	5	41
Drugs and Prostheses	5,197	17	70	4,043	14	80
TOTAL COST	$782,612	$2,566	2,788	$293,514	$1,009*	2,102

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(1) The number of observations used to calculate this mean was 296. Nine individuals in this cohort did not have separate, identifiable, surgical bills.

(2) The number of observations used to calculate this mean was 235. Seventy individuals in this cohort either did not incur any anesthesiology costs or did not have separate bills for anesthesiology.

(3) The number of observations used to calculate this mean was 286. Five individuals in this cohort did not have separate, identifiable, surgical bills.

(4) The number of observations used to calculate this mean was 269. Twenty two individuals in this cohort either did not incur any anesthesiology costs or did not have separate bills for anesthesiology.

* Statistically significant from the mean value reported for the confirmed, surgery cohort at $p \leq 0.01$.

TABLE 62

Medical Resource Utilization Profiles -- Confirmed, Surgery and Not Confirmed, No Surgery Cohorts

Category	Confirmed, Surgery (Cohort D; N = 305) Total	Mean	Standard Deviation	Not Confirmed, No Surgery (Cohort F; N =213) Total	Mean	Standard Deviation
Number of Physician Visits	1,131	3.7	7.3	552	2.6	7.0
Number of Hospital Stays	324	1.1	0.5	12	0.6*	0.2
Length of Stay - All Hospitalizations(1)	2,129	7.0	7.8	106	0.5*	3.0
Number of Surgeries	395	1.3	0.7	4	0.02*	0.1

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(1) This category includes the surgical procedures for which the individual received a second consultation (called original surgery) and all other surgical episodes related to the medical condition for which a second opinion consultation was sought.

* Statistically significant from the mean value reported for the confirmed, surgery cohort at $p \leq 0.01$.

TABLE 63

Medical Resource Cost Profiles -- Confirmed, Surgery and Not Confirmed, No Surgery Cohorts

	Confirmed, Surgery (Cohort D; N = 305)			Not Confirmed, No Surgery (Cohort F; N = 213)		
Category	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Physician Visits	$29,168	$96	214	$14,743	$69	201
Hospitalization	460,796	1,511	2,074	24,711	116*	864
Surgical Fees - Original Surgery	200,068	676(1)	476	0	-	-
Anesthesiology Fees - Original Surgery	50,342	214(2)	117	0	-	-
Surgical Fees - Related Surgery	15,661	51	230	3,225	15**	179
Anesthesiology Fees - Related Surgery	4,343	14	65	856	4**	43
Diagnostics and Laboratory	9,590	31	174	1,891	9**	35
Therapies and Nursing	7,447	24	172	16	0.1**	1
Drugs and Prostheses	5,197	17	70	3,312	16	91
TOTAL COST	$782,612	$2,566	2,788	$48,754	$229*	1,227

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(1) The number of observations used to calculate this mean was 296. Nine individuals in this cohort did not have separate, identifiable, surgical bills.

(2) The number of observations used to calculate this mean was 235. Seventy individuals in this cohort either did not incur any anesthesiology costs or did not have separate bills for anesthesiology.

* Statistically significant from the mean value reported for the confirmed, surgery cohort at $p \leq 0.01$.

** Statistically significant from the mean value reported for the confirmed, surgery cohort at $p \leq 0.05$.

cohort not significant at $p \leq 0.05$.

Medical resource utilization and cost profiles for the four additional cohorts delineated in the cost-benefit modeling reported in chapter 5, are also of interest, although not used directly in the cost-benefit calculations. Data for the confirmed, no surgery (cohort E) and not confirmed, surgery elected without intervening medical treatment (cohort I) cohorts reported in Tables 64 and 65 indicate the utilization and cost experience of the two "noncompliant" groups. In the aggregate, average expenditures for the not confirmed, surgery elected without intervening medical care cohort were $2,589; a statistic that is quite comparable with the one reported for the confirmed, surgery cohort in Table 63. Average cohort-wide expenditures for the confirmed, no surgery group, $127, were about half that incurred by the not confirmed, no surgery group. Data for individuals undergoing an alternate surgical procedure after receiving a non-confirmation on the need for the surgical procedure originally recommended (cohort G), and for those electing surgery after trying some intervening medical treatment (cohort J) are reported in Tables 66 and 67. Individuals undergoing alternate surgery, and individuals electing the original surgery after trying a medical treatment had average expenditures above those in the confirmed, surgery cohort ($2,841 and $3,522 vs. $2,569). Much of this difference is due to higher costs and surgical fees.

Productivity Savings. Productivity gains result from the avoidance of work-loss, restricted activity, and if applicable, school-loss days that result from a person's inability to perform their regular daily activities as a result of illness.* By reducing the incidence of surgery, a second opinion consultation

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* Productivity gains are based exclusively on the avoidence of morbidity since there were no deaths (i.e., mortality) in any of the study cohorts.

TABLE 64

Medical Resource Utilization Profiles -- Confirmed, No Surgery and Not Confirmed, Surgery Elected Without Intervening Medical Treatment Cohorts

	Confirmed, No Surgery (Cohort E; N = 37)			Not Confirmed, Surgery Elected Without Intervening Medical Treatment (Cohort I; N = 51)		
Category	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Number of Physician Visits	75	2.0	4.6	128	2.5	3.6
Number of Hospital Stays	1	0.03	0.2	51	1.0	0.4
Length of Stay - All Hospitalizations	1	0.03	0.2	391	7.7	8.8
Number of Surgeries(1)	1	0.03	0.2	62	1.2	0.7

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(1) This category includes the surgical procedures for which the individual received a second consultation (called original surgery) and all other surgical episodes related to the medical condition for which a second opinion consultation was sought.

TABLE 65

Medical Resource Cost Profiles -- Confirmed, No Surgery and Not Confirmed, Surgery Elected Without Intervening Medical Treatment Cohorts

Category	Confirmed, No Surgery (Cohort E; N = 37)			Not Confirmed, Surgery Elected Without Intervening Medical Treatment (Cohort I; N = 51)		
	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Physician Visits	$1,906	$52	119	$3,504	$69	91
Hospitalization	183	5	30	78,588	1,541	2,201
Surgical Fees - Original Surgery	0	-	-	31,183	650[1]	441
Anesthesiology Fees - Original Surgery	0	-	-	8,434	228[2]	205
Surgical Fees - Related Surgery	0	-	-	4,978	98	560
Anesthesiology Fees - Related Surgery	0	-	-	793	16	71
Diagnostics and Laboratory	856	23	77	952	19	53
Therapies and Nursing	0	-	-	0	-	-
Drugs and Prostheses	1,737	47	194	3,592	70	407
TOTAL COST	$4,682	$127	342	$132,024	$2,589	3,526

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(1) The number of observations used to calculate this mean was 48. Three individuals in this cohort did not have separate, identifiable, surgical bills.

(2) The number of observations used to calculate this mean was 37. Fourteen individuals in this cohort either did not incur any anesthesiology costs or did not have separate bills for anesthesiology.

TABLE 66

Medical Resource Utilization Profiles -- Not Confirmed, Alternate Surgery and Not Confirmed, Surgery Elected After Intervening Medical Treatment Cohorts

	Not Confirmed, Alternate Surgery (Cohort G; N = 44)			Not Confirmed, Surgery Elected After Intervening Medical Treatment (Cohort J; N = 34)		
Category	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Number of Physician Visits	209	4.8	7.6	188	5.5	5.7
Number of Hospital Stays	47	1.1	0.6	41	1.2	0.4
Length of Stay - All Hospitalizations	345	7.8	6.5	364	10.7	10.5
Number of Surgeries (1)	82	1.9	1.0	45	1.3	0.7

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(1) This category includes the surgical procedures for which the individual received a second consultation (called original surgery) and all other surgical episodes related to the medical condition for which a second opinion consultation was sought.

TABLE 67

Medical Resource Cost Profiles -- Not Confirmed, Alternate Surgery and Not Confirmed, Surgery Elected After Intervening Medical Treatment Cohorts

Category	Not Confirmed, Alternate Surgery (Cohort G; N = 44) Total	Mean	Standard Deviation	Not Confirmed, Surgery Elected After Intervening Medical Treatment (Cohort J; N = 34) Total	Mean	Standard Deviation
Physician Visits	$5,304	$121	197	$4,351	$128	159
Hospitalization	69,563	1,581	1,295	70,957	2,087	2,465
Surgical Fees - Original Surgery	32,096	764(1)	437	29,565	954(3)	632
Anesthesiology Fees - Original Surgery	7,196	218(2)	83	5,062	241(4)	162
Surgical Fees - Related Surgery	7,070	161	378	5,817	171	460
Anesthesiology Fees - Related Surgery	1,676	38	85	1,502	44	95
Diagnostics and Laboratory	833	19	55	1,685	50	112
Therapies and Nursing	1,075	24	101	277	8	33
Drugs and Prostheses	196	4	13	535	16	51
TOTAL COST	$125,009	$2,841	1,831	$119,751	$3,522	3,197

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(1) The number of observations used to calculate this mean was 42. Two individuals in this cohort did not have separate, identifiable, surgical bills.

(2) The number of observations used to calculate this mean was 33. Nine individuals in this cohort either did not incur any anesthesiology costs or did not have spearate bills for anesthesiology.

(3) The number of observations used to calculate this mean was 31. Three individuals in this cohort did not have separate, identifiable, surgical bills.

(4) The number of observations used to calculate this mean was 21. Thirteen individuals in this cohort either did not incur any anesthesiology costs or did not have separate bills for anesthesiology.

program also yields indirect benefits by reducing productivity losses.

Seven productivity loss categories were delineated for this study. They are: work/home/school loss due to days spent in the hospital, post hospitalization regular work (labelled "main job") loss, overtime work loss* , work loss at any additional jobs, post hospitalization home loss days incurred by the homemaker (housewife), post hospitalization restricted activity days incurred by students, retired, disabled, or unemployed individuals, and work-loss days incurred by relatives of patients who had to attend to the needs of the patient. In addition, cost data were gathered on expenditures for outside household help that had to be hired to substitute for an ill housewife, time loss (i.e., travel, waiting, and examination time) incurred for obtaining medical care in the year following the second opinion consultation, and out-of-pocket travel expenses incurred in obtaining such medical care.

As can be seen from the data presented in the Table 68, the not confirmed cohort averaged half the number of work/home/school loss days due to hospitalization, and post-hospitalization work loss days as the confirmed group. On average confirmed cohort members lost 6.2 work/home/school days due to hospitalization, while not confirmed group members lost only 3.5 days. Furthermore, confirmed individuals averaged 14.5 post-hospitalization work loss days, while not confirmed individuals lost only 6.2 work days. Both the hospitalization and post-hospitalization work loss patterns are statistically significant at $p \leq 0.01$. Not confirmed individuals reported no additional job work loss, while a very small additional job work loss (28 days) was reported by the confirmed cohorts. Differences with regard to the remaining productivity loss categories

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* If spouses incurred work-loss days to attend to the needs of the patient, this loss was included in the main job and overtime - main job categories.

TABLE 68

Productivity Days Lost -- Confirmed and Not Confirmed Cohorts

	Confirmed (Cohort B; N =342)			Not Confirmed (Cohort C; N = 342)		
Category	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Hospitalization	2,130	6.2	7.7	1,209	3.5*	7.0
Main Job	4,940	14.5	21.8	2,115	6.2*	20.1
Overtime (in hours)	556	1.6	8.4	401	1.2	7.7
Additional Job	28	0.1	1.2	0	-	-
Homemaker	1,846	5.4	21.9	902	2.6	17.0
Restricted Activity	1,097	3.2	22.3	1,267	3.7	26.9
Relative Wage Loss	400	1.2	12.3	83	0.2	1.4

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* Statistically significant from the mean value of the confirmed cohort at $p \leq 0.01$.

(i.e., overtime loss, homemaker loss days, restricted activity days, and relative work-loss days) were not statistically significant at $p \leq 0.05$.

The value of the total productivity losses are reported in Table 69. Average productivity loss sustained by the not confirmed cohort was $175,621 contrasted with $348,656 for the confirmed cohort, resulting in a statistically significant program saving of $173,035. The thee major productivity cost components for each cohort, accounting for over 80% of the total cost, were: post-hospitalization main job work-loss, hospitalization work/home/school loss, and post-hospitalization home loss days incurred by housewives. In each of these cases, average cohort losses ($539 vs. $243, $202 vs. $105, and $144 vs. $69) were significantly different at $p \leq 0.05$ or lower.

Comparable findings emerge from a comparison of the productivity gain profiles of the not confirmed, consultant's recommendation followed cohorts with the confirmed, surgery cohort, as can be seen from the data presented in Tables 70 and 71. Statistically significant utilization and cost differences emerge in mean hospitalization and post-hospitalization main job work loss days and the cost attributed to this productivity loss. An additional significant cost difference that emerges here is in the cost of relative work-loss time. On an average cohort basis, reported relative work loss equaled $5 for the not confirmed cohorts and $42 for the confirmed, surgery cohort. In toto, the average productivity loss for the not confirmed, consultant's recommendation followed cohorts was $447 compared with $1,110 for the confirmed, surgery cohort; a difference that is significant at $p \leq 0.01$. As in the previous comparison, the dominant components of the productivity loss were post-hospitalization main job work loss, work/home/school loss due to hospitalization, and homemaker loss.

TABLE 69

Cost of Productivity Loss -- Confirmed and Not Confirmed Cohorts

	Confirmed (Cohort B; N = 342)			Not Confirmed (Cohort C; N = 342)		
Category	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Hospitalization	$ 69,030	$ 202	249	$ 36,063	$105*	232
Main Job	184,193	539	814	82,953	243*	934
Overtime	4,575	13	76	2,846	8	56
Additional Job	1,121	3	55	0	-	-
Homemaker	49,173	144	581	23,751	69**	453
Restricted Activity	16,566	48	361	20,023	59	435
Relative Work Loss	13,333	39	283	2,352	7**	44
Outside Household Help	882	3	38	735	2	28
Time Lost for obtaining Medical Care	6,735	20	25	4,681	14*	23
Cost of Travel for obtaining Medical Care	3,048	9	17	2,217	6	16
TOTAL COST	$348,656	$1,019	1,385	$175,621*	514*	1,170

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*Statistically significant from the mean value of the confirmed cohort at $p \leq 0.01$.

**Statistically significant from the mean value of the confirmed cohort at $p \leq 0.05$.

TABLE 70

Productivity Days Lost -- Confirmed, Surgery and Not Confirmed, Consultant's Recommendation Followed Cohorts

	Confirmed, Surgery (Cohort D; N =305)			Not Confirmed, Consultant's Recommendation Followed (Cohorts F,G,J; N = 291)		
Category	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Hospitalization	2,129	7.0	7.8	818	2.8*	6.4
Main Job	4,919	16.1	22.5	1,472	5.1*	18.7
Overtime (in hours)	556	1.8	8.9	227	0.8	6.6
Additional Job	6	0.02	0.4	0	-	-
Homemaker	1,755	5.8	22.8	812	2.8	18.2
Restricted Activity	772	2.5	17.8	859	2.9	23.4
Relative Work Loss	388	1.3	13.0	63	0.2	1.2

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* Statistically significant from the mean value of the confirmed, surgery cohort at $p \leq 0.01$.

TABLE 71

Cost of Productivity Loss -- Confirmed, Surgery and Not Confirmed, Consultant's Recommendation Followed Cohorts

Category	Confirmed, Surgery (Cohort D; N = 305)			Not Confirmed, Consultant's Recommendation Followed (Cohorts F,G,J; N = 291)		
	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Hospitalization	$ 69,015	$ 226	249	$ 24,708	$ 85*	209
Main Job	183,438	601	840	60,736	209*	953
Overtime	4,575	15	81	1,665	6	48
Additional Job	77	0.3	4	0	-	-
Homemaker	46,752	153	607	21,355	73	483
Restricted Activity	11,623	38	275	13,788	47	379
Relative Work Loss	12,887	42	299	1,537	5**	29
Outside Household Help	882	3	40	735	3	31
Time Loss for Obtaining Medical Care	6,428	21	25	3,864	13*	26
Cost of Travel for Obtaining Medical Care	2,888	9	18	1,636	6*	15
TOTAL COST	$338,565	$1,110	1,411	$130,024	$447*	1,192

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* Statistically significant from the mean value of the confirmed, surgery cohort at $p \leq 0.01$.

**Statistically significant from the mean value of the confirmed, surgery cohort at $p \leq 0.05$.

If one were to use the not confirmed, no surgery group experience (cohort F) as the basis for estimating program savings, an even greater productivity saving would emerge, as can be seen from the data reported in Tables 72 and 73. Average per capita cohort productivity loss for the not confirmed, no surgery group was $176 compared with an average cohort productivity loss of $1,110 for the confirmed, surgery group.

Productivity loss data for the two "noncompliant" cohorts (E and I) included in the cost-benefit modeling are presented in Tables 74 and 75. Average cohort productivity loss for the confirmed, no surgery group were $273, while the comparable statistic for the not confirmed, surgery elected without intervening medical treatment cohort was $894. By way of comparison, the not confirmed, no surgery cohort exhibited an average productivity loss of $176 and the confirmed, surgery cohort displayed average productivity losses of $1,110.

Productivity loss profiles for the remaining two cohorts identified in the cost-benefit modeling -- not confirmed, alternate surgery and not confirmed, surgery elected after intervening medical treatment -- are presented in Tables 76 and 77. The average productivity loss for the not confirmed, alternate surgery cohort was $1,044; while average productivity losses reported by the not confirmed, surgery elected after intervening medical treatment cohort was $1,373. By way of comparison, average cohort productivity losses incurred by the confirmed, surgery cohort was $1,110.

Summary. Medical resource utilization and productivity gain savings for the cohorts included in the cost-benefit modeling (equations 2 through 4 and 7 through 9 presented in chapter 5) are summarized in Table 78. Comparing the experience of the confirmed and the not confirmed groups yields a total program saving (i.e., benefit) of $534,791. Sixty-eight percent of this total saving results from decreased use of medical resources, and 32% from decreased productivity losses. Before a similar comparison can be made between the confirmed,

TABLE 72

Productivity Days Lost -- Confirmed, Surgery and Not Confirmed, No Surgery Cohorts

	Confirmed, Surgery (Cohort D; N = 305)			Not Confirmed, No Surgery (Cohort F; N = 213)		
Category	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Hospitalization	2,129	7.0	7.8	106	0.5*	3.0
Main Job	4,919	16.1	22.5	413	1.9*	14.4
Overtime (in hours)	557	1.8	8.9	38	0.2*	2.5
Additional Job	6	0.02	0.4	0	-	-
Homemaker	1,755	5.8	22.8	69	0.3*	4.2
Restricted Activity	772	2.5	17.8	479	2.3	20.6
Relative Work Loss	388	1.3	13.0	9	0.1	0.6

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* Statistically significant from the mean value of the confirmed, surgery cohort at $p \leq 0.01$.

TABLE 73

Cost of Productivity Loss -- Confirmed, Surgery and Not Confirmed, No Surgery Cohorts

Category	Confirmed, Surgery (Cohort D; N = 305) Total	Mean	Standard Deviation	Not Confirmed, No Surgery (Cohort F; N =213) Total	Mean	Standard Deviation
Hospitalization	$ 69,015	$ 226	249	$ 3,214	$ 15*	97
Main Job	183,438	601	840	21,747	102*	945
Overtime	4,575	15	81	272	1*	18
Additional Job	77	0.3	4	0	-	-
Homemaker	46,752	153	607	1,826	9*	110
Restricted Activity	11,623	38	275	7,540	35	328
Relative Work Loss	12,887	42	299	156	1**	10
Outside Household Help	882	3	40	0	-	-
Time Loss for Obtaining Medical Care	6,428	21	25	2,031	10*	24
Cost of Travel for Obtaining Medical Care	2,888	9	18	641	3*	12
TOTAL COST	$338,565	$1,110	1,411	$37,427	$176*	988

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* Statistically significant from the mean value of the confirmed, surgery cohort at $p \leq 0.01$.

**Statistically significant from the mean value of the confirmed, surgery cohort at $p \leq 0.05$.

TABLE 74

Productivity Days Lost -- Confirmed, No Surgery and Not Confirmed, Surgery Elected Without Intervening Medical Treatment Cohorts

	Confirmed, No Surgery (Cohort E; N = 37)			Not Confirmed, Surgery Elected Without Intervening Medical Treatment (Cohort I; N = 51)		
Category	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Hospitalization	1	0.03	0.2	391	7.7	8.8
Main Job	21	0.6	3.4	643	12.6	26.6
Overtime (in hours)	0	-	-	174	3.4	12.5
Additional Job	22	0.6	3.4	0	-	-
Homemaker	91	2.5	10.5	90	1.8	7.2
Restricted Activity	325	8.8	44.4	408	8.0	42.9
Relative Work Loss	12	0.3	1.9	20	0.4	2.3

TABLE 75

Cost of Productivity Loss -- Confirmed, No Surgery and Not Confirmed, Surgery Elected Without Intervening Medical Treatment Cohorts

Category	Confirmed, No Surgery (Cohort E; N = 37)			Not Confirmed, Surgery Elected Elected Without Intervening Medical Treatment (Cohort I; N = 51)		
	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Hospitalization	$ 15	$ 0.4	3	$11,355	$223	314
Main Job	755	20	121	22,217	436	789
Overtime	0	-	-	1,181	23	90
Additional Job	1,044	28	167	0	-	-
Homemaker	2,421	65	278	2,396	47	190
Restricted Activity	4,943	134	699	6,235	122	645
Relative Work Loss	446	12	77	815	16	93
Outside Household Help	0	-	-	0	-	-
Time Loss for Obtaining Medical Care	307	8	17	817	16	17
Cost of Travel for Obtaining Medical Care	160	4	12	581	11	19
TOTAL COST	$10,091	$ 273	816	$45,597	$894	1,031

TABLE 76

Productivity Days Lost -- Not Confirmed, Alternate Surgery and Not Confirmed, Surgery Elected After Intervening Medical Treatment Cohorts

Category	Not Confirmed, Alternate Surgery (Cohort G; N = 44)			Not Confirmed, Surgery Elected After Intervening Medical Treatment (Cohort J; N = 34)		
	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Hospitalization	347	7.9	6.5	365	10.7	11
Main Job	498	11.3	27.5	561	16.5	23
Overtime (in hours)	65	1.5	7.6	124	3.6	16
Additional Job	0	-	-	0	-	0
Homemaker	383	8.7	21.6	360	11.4	45
Restricted Activity	371	8.4	39.9	9	0.3	1
Relative Work Loss	31	0.7	2.1	23	0.7	2

TABLE 77

Cost of Productivity Loss -- Not Confirmed, Alternate Surgery and Not Confirmed, Surgery Elected After Intervening Medical Treatment Cohorts

	Not Confirmed, Alternate Surgery (Cohort G; N = 44)			Not Confirmed, Surgery Elected After Intervening Medical Treatment (Cohort J; N = 34)		
Category	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Hospitalization	$ 9,693	$ 220	217	$11,801	$ 347	371
Main Job	17,563	339	960	21,426	631	867
Overtime	487	11	55	906	27	116
Additional Job	0	-	-	0	-	-
Homemaker	10,186	231	575	9,343	275	1,201
Restricted Activity	5,632	128	625	616	18	18
Relative Work Loss	879	20	95	502	15	287
Outside Household Help	305	7	46	430	13	74
Time Loss for Obtaining Medical Care	753	17	17	1,080	32	38
Cost of Travel for Obtaining Medical Care	424	10	12	571	17	24
TOTAL COST	$45,922	$1,044	1,258	$46,675	$1,373	1,584

TABLE 78

SUMMARY OF PROGRAM SAVINGS

Comparison Groups	Medical Resource Utilization	Productivity Gains	Total Savings
Confirmed - Not Confirmed $[B_C - C_C]$	\$361,756 (787,294 - 425,538)	\$173,035 (348,656 - 175,621)	\$534,791
Confirmed, Surgery - Not Confirmed, Consultant's Recommendation Followed $[D_C - (F_C + G_C + J_C)]$	489,098 (782,612 - 293,514)	208,541 (338,565 - 130,024)	697,639
Confirmed, Surgery - Not Confirmed, Consultant's Recommendation Followed $[D_C - (F_C + G_C + I)]$ Adjusted For Equal Cohort Size	453,192	192,986	646,178

surgery and the not confirmed, consultant's recommendation followed groups an adjustment is required due to the unequal size of each cohort.* Multiplying the average confirmed, surgery cohort medical and productivity cost by an assumed cohort size of 291 (rather than an actual cohort size of 305) yields a total cohort expenditure based on a sample size equal to that of not confirmed, consultant's recommendation followed cohorts. Utilizing such an adjustment, a total program saving of $646,178 emerges from a comparison based on the experience of the not confirmed, consultant's recommendation followed and confirmed, surgery cohorts. Seventy percent of this total saving results from decreased medical resource utilization, and 30% results from decreased productivity losses.

These savings although impressive, represent only one part of the cost-benefit equation. The other part is an accounting of the cost of the Cornell-New York Hospital second opinion program.

Program Cost

Program costs consist of the administrative costs incurred to operate the program, the expenditures for the second opinion consultation visits and any ancillary tests ordered as part of the consultation, and out-of-pocket costs incurred by program participants in obtaining the consultation. Out-of-pocket costs encompass travel cost and wage loss due to work time missed in order to obtain the second opinion consultation. Costs of evaluating the program are not listed since separate funding for this task was provided by HCFA. (Companies, funds, or corporations would have to segregate evaluation costs, if included in their administrative budget).

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* A similar adjustment is not needed for the confirmed - not confirmed comparison as each of these cohorts has an n of 342.

The costs of administering the second opinion program were estimated from records maintained by the Building Service Local 32B-J health fund. Costs incurred, or imputed, for the 1977 calendar year are reported in Table 79. Personnel costs eaualled $29,350, of which $19,350 were salary and fringe benefit costs for 1.5 (FTE) intake officers, and $10,000 was the allocated stipend of the health fund's medical advisor. Non-salary costs equalled $10,000 of which $7,200 are imputed rental costs, and $2,800 represent actual incurred expenses. A separate study was not conducted to ascertain 1978 costs, which would have had to be discounted to a constant (1977) dollar level. As no changes occurred in the administrative structure of the program during 1978, 1977 costs were used as a proxy for 1978 discounted costs. As program intake spanned a two year period (January 1, 1977 through December 31, 1978), it is estimated that total administrative costs were $78,700.

During the two year study period 2,284 individuals obtained second opinion consultations and 24 individuals obtained an additional (i.e., third) opinion. On average, the cost of the second opinion consultation and associated ancillary procedures was $43.95, and the average cost of third opinion consultations and associated ancillary procedures was $47.42. (Both of these cost statistics are in constant (1977) dollars.) Based on the number of consultations rendered, total expenditures for all consultations equalled $101,520.

Detailed data were not gathered on out-of-pocket expenditures incurred in obtaining second opinion consultations. It is assumed that travel to and from the consultant's office as well as the examination took, on average, two hours. The average hourly wage prevailing for the study population, $5, was used to derive a total out-of-pocket cost estimate of $23,080.*

Total program cost is summarized in Table 80. In the aggregate the second

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* $(2 \times \$5) \cdot (2,284 + 24) = \$23,080$

TABLE 79

Annual (1977) Administrative Cost, Cornell - New York Hospital Second Opinion Consultation Program Administered on Behalf of the Building Service Local 32B-J Health Fund

Category		Total Cost
Personnel		
1.5 FTE intake officers @ $10,000 per FTE		$ 15,000
Fringe Benefits (29% of salary)		4,350
Medical advisor - 1 day/wk		10,000
	Subtotal	29,350
Supplies, forms, brochures		1,600
Telephone - 2 trunk lines @ $600/line		1,200
Rent (imputed)*		7,200
	TOTAL	$ 39,350

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*The second opinion intake office occupies one room (20' x 20'). The average cost for space rental in Manhattan, including utilities, maintenance, and insurance, was $18 sq/foot yielding an imputed rental cost of $7,200.

TABLE 80

Estimated Total Cost of the Cornell - New York Hospital Second Opinion Consultation Program Administered on Behalf of the Building Service Local 32B-J Health Fund, 1977 - 1978

Cost Category	Total Cost	Percent of Total
Administrative Cost	$ 78,700	38.7
Medical Cost	101,520	49.9
Out-of-Pocket Cost	23,080	11.4
TOTAL	$203,300	100.0

opinion consultation program administered on behalf of the Building Service Local 32B-J health fund during 1977-1978 cost $203,300. Approximately 50% of the cost was incurred for medical expenses associated with the second opinion consultation, 39% of the cost was accounted for by administrative expenses, and 11% of the cost reflect out-of-pocket expenses incurred by the program beneficiaries.

Cost-Benefit Calculations

Based on the cost estimates presented in the previous sections, one can calculate the various cost-benefit statistics represented in equations (2) through (4) and (7) through (9) in Chapter 5. The data presented in Exhibit 5 summarize the cost-benefit calculations based on a comparison of the confirmed and not confirmed cohort experiences. Exhibit 6 presents comparable calculations where the reference frame is limited solely to those individuals who followed the recommendation of the second opinion consultant.*

Based on the experience of the not confirmed and confirmed cohorts, which include individuals who complied with the recommendation of the second opinion consultant and others who did not, one obtains a benefit-cost ratio of 2.63. This implies that for every $1 of program cost incurred, $2.63 of benefits accrue. The benefit-cost ratio is obtained by summing the medical resource utilization and productivity loss experience of both cohorts (Tables 59 and 69) and subtracting the not confirmed cohort value from the confirmed cohort value. This statistic ($534,791) called program benefit, is then divided by program cost - labelled U_c -- (reported in Table 80) to obtain the benefit-cost ratio.

An alternate evaluation statistic is the program's net present value (NPV).

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* The comparison cohorts in this analysis are confirmed, surgery (n=305) and not confirmed, consultant's recommendation followed (n=291). To standardize for cohort size, the expenditure values for the confirmed, surgery cohort were adjusted downward to an assumed cohort size of 291.

EXHIBIT 5

Cost-Benefit Statistics: Full Sample Comparison

Component	Value
B_C	\$1,135,950
C_C	601,159
U_C	203,300
P	2,284

Cost-Benefit Equations

(2) $$\text{Benefit/Cost} = \frac{B_C - C_C}{U_C}$$

$$= \frac{1,135,950 - 601,159}{203,300}$$

$$= \frac{534,791}{203,300} = 2.63$$

(3) $$NPV = (B_C - C_C) - U_C$$

$$= 534,791 - 203,300 = \$331,491$$

(4) $$NPV/P = \frac{(B_C - C_C) - U_C}{P}$$

$$= \frac{331,491}{2,284} = \$145.14$$

EXHIBIT 6

Cost-Benefit Statistics: Consultant's Recommendation Followed Subsample

Component	Value
D_c	\$1,069,716*
$F_c + G_c + J_c$	423,538
U_c	203,300
P	2,284

Cost-Benefit Equations

(7)
$$\text{Benefit/Cost} = \frac{D_c - (F_c + G_c + J_c)}{U_c}$$

$$= \frac{1,069,716 - 423,538}{203,300}$$

$$= \frac{646,178}{203,300} = 3.18$$

(8)
$$\text{NPV} = [D_c - (F_c + G_c + J_c)] - U_c$$

$$= 646,178 - 203,300 = \$442,878$$

(9)
$$\text{NPV/P} = \frac{[D_c - (F_c + G_c + J_c)] - U_c}{P}$$

$$= \frac{442,878}{2,284} = \$193.90$$

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*Adjusted to an assumed group size of 291

This is obtained by subtracting program cost from program benefit. The NPV for the second opinion consultation program is $331,491. This indicates that net benefit (i.e., total benefit minus total cost) equalled $331,491 for the program under study. Dividing net benefit by the total number of program participants (2,284) yields a net benefit per participant of $145. Thus, on average, for every individual who is told to obtain a second opinion consultation (a population pool much larger than the number not confirmed), one can expect to save $145.

The perspective adopted in the current study recognizes benefits from both reduced utilization of medical resources and reductions in productivity loss. If only medical resource utilization that can lead to a direct reduction in medical care expenditures, and costs borne directly by the program had been considered in the analysis, the ensuing benefit-cost ratio would have been 2.00.* Even from this (narrow) perspective, the second opinion program must be considered cost-beneficial in that for every $1 of cost incurred, $2.00 of benefit (reduced medical resource utilization) occurred.**

If the program evaluation perspective is defined to exclude all "non-compliant" individuals (i.e., those cohorts that did not follow the recommendation of the consultant physician, these groups being cohorts E and I) and focuses only on savings from "compliant" behavior, the benefit cost-ratio increases to 3.18, as can be seen from the data presented in Exhibit 6. This is the case because, in the current study, more "noncompliers" elected surgery after a non-confirmation than rejected surgery after a confirmation. That is, the number of individuals in the not confirmed, surgery elected without intervening medical treatment group exceeded those in the confirmed, no surgery group. Thus excluding their experience increases the estimate of program savings. There is no basis upon which to predict whether comparable noncompliance rates (confirmed, no surgery = 10.8% of the confirmed sample and not confirmed, surgery elected without intervening medical treatment = 14.9% of the not confirmed sample) would prevail in other populations.

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* Program benefit, as noted in Table 78, would have been $361,756 instead of $534,791. Dividing benefit ($361,756) by administrative and medical cost ($180,220) yields 2.00.

** The computation of medical resource savings used throughout this study is based on a long-run perspective where all costs are considered to be variable. In the short-run, some costs are fixed and will be incurred even when utilization declines. This is particularly true in the case of hospital care. As agreement does not exist as to the percent of total costs that are fixed and variable, respectively, we assume that 50% of costs are fixed and 50% variable. Utilizing this assumption, short-run savings due to decreased hospital use decline from $217,610 (i.e., $460,979 - $243,819; line 2 - Table 59) to $108,580, thereby reducing the aggregate benefit-cost ratio from 2.63 to 2.10, and the benefit-cost ratio based exclusively on reduced medical resource utilization declines from 2.00 to 1.25. It is our opinion, however, that a long run perspective, where all costs are variable, is the proper one for policy analysis.

Sensitivity Analysis. The cost-benefit estimates presented up to this point are based on the use of a 10% discount rate. As noted in chapter 5, two alternate discount rates were used to test the sensitivity of the results to the selection of 10% discount rate. The alternate rates used were 15% and 6%. Detailed tables presenting medical resource utilization and productivity loss profiles for the four main groups whose profiles form the basis for the cost-benefit analysis (cohorts B, C, D, and F, G and J) are presented in Appendix G. Use of a 15% discount rate lowers the estimate of program savings to $514,010 and results in a benfit-cost ratio of 2.53. Alternately, use of a 6% discount rate raises the estimate of program savings to $553,940 and results in a benefit-cost ratio of 2.72. These two benefit-cost ratios can be considered upper and lower boundary estimates, respectively. Even if one decided to select the lower bound estimate (2.53) the second opinion consultation program for Local 32B-J must be judged to be cost-beneficial.

Summary and Conclusion

An evaluation of the economic value of the Cornell-New York Hospital second opinion consultation program administered on behalf of the Building Service Local 32B-J health fund indicates that substantial net savings were reaped both by the health fund and its covered beneficiaries. Comparing the medical utilization histories of the not confirmed and the confirmed cohorts in the first year after receipt of the consultation indicates that the not confirmed group spent $361,756 less on medical care than the confirmed group. Furthermore, due to the avoidance of surgery, the not confirmed group exhibited fewer work loss, home loss, and restricted activity days. This saving, referred to as a productivity gain, was valued at $173,035. Jointly, savings from reduced medical care utilization and increased productivity equalled $534,791.

Total costs incurred by the second opinion consultation program during the two year study period (1977-1978) were $203,300. Total expenditures for consultations and associated ancillary procedures equalled $101,520. Administrative costs were $78,700, and out-of-pocket costs borne by program participants was estimated at $23,080.

Merging the estimates of program benefit and cost yields a benefit-cost ratio of 2.63. That is, for every $1 of cost incurred, $2.63 of benefits occurred. Based exclusively on this "payback ratio", one must conclude that there are definite economic benefits to be derived from a second opinion consultation program.

Other evaluations of second opinion consultation programs have suggested that the receipt of a second opinion is cost beneficial.[1-3] The results of the current study adds further weight to this contention. Furthermore, the results of the current study should be viewed as more definite, as the methodology and data base used in this study overcome many of the shortcomings inherent in previous evaluations of the economic potential of second opinion consultation programs. The first published evaluation of a second opinion program focused on the initial 20 months experience of Blue Cross and Blue Shield of Greater New York's voluntary second surgical opinion program. One of the major findings reported in this evaluation, based on the experience of over 1,500 program participants, was an estimated gross savings of $600,000 in health care costs. After deducting the costs of administering the program, which included relatively high start up costs, the evaluators estimated a net savings due to the program of a quarter of a million dollars.[4] It should be recognized that this estimate excludes any productivity gains resulting from the avoidance of work or home loss days and is based exclusively on assumed gross savings from the avoidance of surgery. Thus from a societal perspective, the reported savings are underestimates. In generating the assumed savings resulting from the avoidance of surgery, the relative experience of a comparison group similar to the not confirmed cohorts specified in this study was not utilized. Therefore, savings reported from the avoidance of surgery must be viewed as gross savings that were not offset by expenditures incurred by a "control" group, and as such, these reported savings are overestimates of true medical resource savings.

A recently published evaluation of Massachusetts' mandatory consultation program for elective surgery for Medicaid recipients estimated that net statewide savings to Medicaid during the first year of program operations was $856,500, and when benefits are compared to costs, the program exhibits a benefit-cost ratio of 3.9.[5] It should be noted that this study considered program costs and savings strictly from Medicaid's perspective. If costs were borne by other parties, or if benefits accrued to other parties, they were not included in the analysis. Furthermore, data on medical care expenditures were based on estimated Medicaid payments rather than claim files data, which was used in the current study. Productivity gains or loses were omitted from the analysis of program benefit, and gross estimated savings from foregone surgery were offset only by the cost of other surgery, if other surgery was recommended by the consultant. Nonsurgical expenses, such as for physician visits and drug therapy were not estimated for individuals foregoing surgery and subtracted from estimated gross savings. As in the case of the Blue Cross and Blue Shield of Greater New York study, the reported program savings and cost-benefit ratio are biased by these omissions.

Gertman _et al._ present an alternate estimate of the economic value of the Massachusetts program, based exclusively on the experience of 49 patients living in the metropolitan Boston area who received second opinions reversing the recommendation for hysterectomy. As in the evaluation conducted by Martin _et al._, program benefit was estimated solely by projecting savings from changes in amount of surgery performed. Based on this procedure, a benefit-cost ratio of 2.27 was reported. When this methodology was applied to the other seven procedures encompassed by the Massachusetts program*, Gertman _et al._ speculate that the benefit-cost ratio would be only 1.11.[6] The shortcomings inherent in the Martin _et al._ evaluation apply with equal force to the Gertman _et al._ study.

The economic evaluation presented in the current study does not suffer from the shortcomings inherent in the Joffe, Martin _et al._ and Gertman _et al._ evaluations. Our perspective recognizes all social costs, not just costs germaine to one party such as a Medicaid program. The definition of program benefit used in the current study encompasses both medical resource and productivity savings. Furthermore, the medical resource savings reported in this study are based on actual data maintained in a health fund's medical claims files. Cost estimates were used only when proxy values were needed.

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* These procedures are: tonsillectomy and adenoidectomy, cholecystectomy, hemorrhoidectomy, laminectomy or spinal fusion, meniscectomy, submucous resection or nasal septal repair, and excision of varicose veins.

The economic analysis presented in this chapter indicates that the Cornell-New York Hospital second opinion consultation program administered on behalf of the Building Service Local 32B-J health fund returned $2.63 in benefits for every $1 of cost incurred. Had the program required that adherence to the consultant's recommendation be a prerequisite for full medical coverage, as is the case with the second opinion program offered by the Prudential Insurance Company of America; had it covered a laborforce commanding higher wage levels; and had it been targeted to selective diagnoses, the benefit-cost ratio would have exceeded 2.63. Support for the first contention can be found in the analysis of the "compliant" cohorts presented in this study. When the analysis was limited solely to individuals following the recommendation of the consultant, the reported benefit-cost ratio was 3.18, indicating a saving of $3.18 for every $1 expended. As noted in chapter 5, the median weekly salary for Building Service Employees, was in the $200-$299 range, implying that median hourly earnings are in the $5-$8 range. Had the covered employees commanded hourly wages in the $13-$16 range, as is the case for carpenters and teamsters, productivity savings would have been higher. This is the case because work loss days avoided would have been valued at the higher wage level. Greater productivity savings would automatically lead to a higher benefit-cost ratio. Finally, there is reason to believe that economic benefits could be maximized by confining second opinion consultation programs to those diagnoses which have the highest non-confirmation rates. While additional research is needed to identify these diagnoses, the data reported by Martin et al. indicate substantial differences in net savings for each of the eight procedures relevant to the Massachusetts Medicaid program.[7,*]

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[*] Reporting on savings estimated for patients whose need for surgery was reviewed by the Bay State Health Care Foundation, Martin et al. estimate an aggregate benefit-cost ratio of 4.2. When procedure specific estimates were made, the benefit-cost ratio ranged from a low of 0.9 for cholecystectomy to a high of 7.8 for excision of varicose veins.

The demonstrated cost savings potential of a mandatory second opinion consultation program for elective surgery justifies the inclusion of such programs in the array of cost containment initiatives already adopted or under consideration as a means of controlling the rise in medical care costs.

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Chapter 7

Implications of the Cornell-New York Hospital Second Opinion Program: Summary and Conclusions

Findings from the Cornell-New York Hospital second opinion elective surgery program strongly suggest that such programs, particularly mandatory second opinion programs, have the potential for reducing surgical utilization as well as containing costs. Data from the utilization phase of the study showed that of those not confirmed for surgery, 78.2 percent within the voluntary group and 61.4 percent within the mandatory group had not had the operation performed one year from the date of their second opinion consultation. The majority within both groups reported that they decided against surgery on the basis of the consultant's recommendation. Moreover, 41.6 percent within the voluntary group and 51.3 percent within the mandatory group who were not confirmed for surgery neither had the operation performed nor reported receiving any form of medical treatment since their second opinion consultation. Since neither surgery was performed nor medical treatment received, we legitimately question why surgery was recommended in the first place.

Findings also showed that specific surgical subspecialties had higher rates of non-confirmation by the Boarded consultants, particularly orthopedics and gynecology. In general, the second opinion consultants recommended more conservative treatment modalities because they felt that the patient's symptoms did not warrant surgical intervention.

Furthermore, evidence strongly suggests that second opinion programs have the potential for containing costs. The cost-benefit analysis of a mandatory program clearly showed that the benefits outweighed the costs of the program. If a select number of surgical procedures (hysterectomies, lens extraction, or foot surgery, for example) were mandated for a second opinion, we hypothesize that the benefits to costs ratio would be most favorable. Such high volume, highly discretionary procedures would be ideal for inclusion in a limited, mandatory second opinion program.

A comparison of surgical utilization (prior to the second opinion program and after the program had been in effect for a few years) did show that for those Funds with either a voluntary or mandatory program, surgical utilization was altered. That is, a noticeable drop in inpatient surgical claims was evident, thus altering the pattern of surgical care. This phenomenon has been labeled the 'Sentinel Effect'.

Sentinel Effect

The Sentinel Effect is attributed to the knowledge of the existence of the second opinion program among physicians and patients. When a patient, for example, tells his/her doctor that a second opinion either will be sought voluntarily or has to be scheduled in order for benefits to be paid, there appears to be a subtle shift in physicians' recommendations. Often the physician appears to be more conservative in recommending surgery. The United Storeworkers mandatory second opinion program showed a nine percent decrease in surgical claims in a before and after study (1971-1972 and 1974-1975). The Building Service Workers' Fund (Local 32B-J) too has shown a consistent drop in the number of surgical admissions. Since the mandatory program was established in January 1977, the number of surgical admissions has been decreasing 10 percent annually. Specifically, there were 3700 surgical admissions in 1976, 3325 in 1977, and 2944 in 1978.

While precise estimates of the Sentinel Effect could not be made as part of the cost benefit analysis present in Chapters 5 and 6 because of the methodology adopted, it is plausible to assert that some additional surgery was avoided as a result of the Sentinel Effect. If the reduced medical care resource utilization and productivity gains associated with the reduced level of surgery were added to the program benefits, it is clear that the benefit-cost ratio would have exceeded 2.63. Unfortunately we cannot estimate how much greater it would be.

Cost Efficacy

Second opinion consultation programs represent the first concerted cost-containment effort targeted directly at the individual providers of medical care. Prior cost containment efforts have been focused almost exclusively on the institutional providers of care. While early efforts at controlling cost via rate regulation[1-6] and utilization review[7-11] were not overly successful, these efforts have become more successful as the respective programs matured.[12,13] To date, a comprehensive evaluation of rate regulation from a cost-benefit perspective has not been undertaken. While it has been shown that rate regulation reduces the rate at which hospital costs increase in a number of large industrial states one is not sure whether the gains are being offset by the cost of the rate setting activity. Furthermore, it should be evident that rate regulation will succeed only in those states that have the political will to enforce and sustain such a system. A recently released evaluation of utilization review activities conducted by Professional Standard Review Organizations indicates that while benefits exceed costs, the benefit-cost ratio is only 1.269.[14]

It is reasonable to assert that the control of health care costs requires a multiplicity of efforts. Although control of institutional costs is beginning to yield positive results, one must also develop programs that are directed at the individual physicians, who play a dominant role in determining the volume and type of medical care services that are consumed.

To date the PSRO program, which by design entails a retrospective review, has offered no direct challenge to the individual physician. Second opinion consultation programs are currently the only major prospective effort at influencing and modifying physician behavior. As such programs can both reduce surplus surgery and effectively contain costs, they merit inclusion in any array of public or private sector cost containment efforts.

To the extent that rate regulation is viewed as a successful cost containment measure, it directly imparts public entitlement (i.e., Medicare and Medicaid), and possibly also Blue Cross expenditures. It is of no direct assistance to commercial insurers, who pay charges. There is reason to believe that hospitals will try to recoup some of the losses they sustain from rate regulation, by raising charges to self-pay patients.[15] From the perspective of these purchasers of care, mandatory second opinion consultation programs are the only proven way to reduce hospital and surgical costs.

Significance of the Cornell-New York Hospital Second Opinion Program

In all probability, it is the Cornell second opinion program which has provided the impetus for the proliferation of other second opinion programs across the country. A voluntary second opinion program, Program for Consultation on Elective Surgery--PROCES--is administered by the three major automobile companies (Ford Motor Company, General Motors Corporation and Chrysler Corporation), the United Auto Workers (UAW), and Blue Cross/ Blue Shield of Michigan. The program, initiated July 1, 1977, is offered to eligible members and dependents in the Tricounty Detroit area (eligible population of 1.5 million). Preliminary data indicated that roughly one-third of those screened were not confirmed for surgery by the board certified consultant.

Blue Cross/Blue Shield of Greater New York offers a voluntary second opinion, Program for Elective Surgical Second Opinion--PRESSO--to its more than 5 million subscribers. Roughly 27% of those screened were not confirmed for surgery, with orthopedic, urologic and gynecological conditions having the highest rates of non-confirmation. The PRESSO program is credited with saving almost $250,000. The estimated total savings from operations not performed was approximately $600,000 ($1,800/patient), less $351,000 in promotional and program costs.

Other third-party insurers have established or are planning to establish second opinion programs. Blue Cross/Blue Shield in Pennsylvania, Maine, New Hampshire, Vermont and Illinois, to name a few states, have voluntary second opinion programs. Indeed, the Blue Shield Association reports that a total of 27 plans offer second surgical opinion programs on a full scale or experimental basis to approximately 9 million subscribers.

Many insurance companies have implemented second opinion programs. In particular, New York Life Insurance Company, the fourth largest life insurance company, is offering the benefit as part of its health insurance coverage for its 1.9 million group health insurance subscribers; Connecticut General has expanded this benefit to its group insurance customers in Hartford County; and Metropolitan Life Insurance is experimenting with a mandatory program for an employer in the Midwest. Group Health Incorporated has reported that their first year's experience with a second opinion program showed that the program "proved its worth".

The Prudential Insurance Company of America offers a voluntary program whereby its employers are allowed lesser surgical benefits if the claimant has elective surgery without seeking a second opinion or if the individual chooses to have the elective surgery when the consultant did not confirm the need for surgery. They are also planning to market a mandatory program whereby subscribers who do not get a consultation or who have surgery despite a negative second opinion will receive reduced benefits for the surgeon's fee. Many, including the American College of Surgeons, have taken sharp issue with the punitive nature of the Prudential program. It is felt that patients should not be penalized for going against the consultant's recommendation and it is wrong to set up a hierarchy of one physician's opinion over another's.

Several corporations have established or are developing a second opinion program for their employees. In general, voluntary programs predominate. Johnson & Johnson, IBM, AT & T, Motorola (in Phoenix, Arizona) and Raytheon Corporation, to name a few, have second opinion programs. In addition, union locals, such as the Teamsters Union Local 25 in Boston, Massachusetts have established second surgical opinion programs (Local 25 instituted a mandatory program).

The government, too, has become an active participant in the second opinion movement. In addition to the evaluation phase of the Cornell program, the Department of Health and Human Services (DHHS) through the Health Care Financing Administration (HCFA) has funded two demonstration second opinion programs for Medicare recipients in New York State and in Michigan. Both programs, to run for three years, were established in the summer of 1978 and offer, on a voluntary basis, a second opinion to Medicare beneficiaries who have been recommended previously for elective surgery.

The government is contemplating the implementation of second opinion programs for Medicaid recipients. Only one state, Massachusetts, presently has such a program. In July 1976, the Massachusetts state legislature established a mandatory second surgical opinion program for Medicaid recipients. Only eight specific elective procedures* are covered in the program. The program is administered through the state's five PSROs; however, in the western and southern parts of the state, a desk audit is done by a nurse reviewer. The program uses preset criteria for the medical necessity of certain procedures; many potential consultations are waived because the doctor's supporting documentation meets the preset criteria. In this program, if the need for surgery was not confirmed by the second opinion consultant, patients would be notified that they could seek a third opinion, at no extra cost to them, after which they could have surgery, if they wanted, regardless of the third consultant's opinion. If the consulting surgeon confirmed the need for surgery, the patient could make arrangements to have the operation performed if he or she so desired.

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* Tonsillectomy and/or adenoidectomy; hemorrhoidectomy; hysterectomy; disc and spinal fusion; knee operations; repair of nasal septum; excision of varicose veins; and cholecystectomy.

There is a nationwide second surgical opinion program in existence which is sponsored by HCFA, DHHS. A toll-free "hot-line" has been established. Callers are given the number of a referral center in their area that will help them locate a physician who will provide a second opinion consultation. The second opinion program is part of an effort by DHHS to expand patient's knowledge about surgery and to help contain rising health care costs.

The Health Care Financing Administration (HCFA) has awarded a contract to Abt Associates to evaluate the Massachusetts Medicaid Program, the two voluntary Medicare programs in Michigan and New York, and the nationwide second opinion program. Results of this evaluation will be used to decide to what extent Medicare and Medicaid should promote second opinion programs, and how such programs should be administered.

In addition to the programs in existence, state legislatures have addressed the issue. Several laws have been enacted or proposed which voluntarily provide for second opinion consultations. New York State enacted a second opinion program for Medicaid recipients; however, the law denied reimbursement for surgical procedures determined to be "deferrable" on the basis of a second opinion consultation. A Medicaid patient, denied reimbursement for a dilatation and curettage, filed a lawsuit in January 1977. A U.S. district judge ruled the law in violation of the federal Social Security Act. The state's second opinion program was dropped in July 1978 as a result of a consent order agreeing that second opinion programs cannot deny reimbursement on the basis of a second opinion. This legal challenge should not be confused with the law enacted by the New York state legislature in August 1976. This legislation mandated that all policies or contracts which provide coverage for inpatient surgical care be expandable to include a second opinion option on a voluntary basis. Recently, the State of New York Insurance Department has announced approval of health insurance programs that mandate second surgical opinion consultations.

U.S. Representative Andrew Maguire (D-N.J.) has introduced the Quality of Surgical Care Act of 1979 which, if enacted, would require Medicare and Medicaid beneficiaries to obtain a second opinion prior to undergoing elective surgery, at no additional cost to the individual. If the individual failed to obtain a second opinion and had the surgery, there would be no federal reimbursement for the medical procedures associated with the surgery. It is hoped that this mandatory second opinion program would not only result in an improvement in the quality of surgical care available, but also serve to contain health care costs. It is unclear which group(s) or organization(s) will serve as the referral center and it is not clear if all surgical procedures will be mandated or whether a specified few will be selected. Medicare would pay for 100% of the reasonable charge. Under Medicaid, the federal match rate paid to states for the second and/or third opinions would be 90%.

Representative Gladys Noon Spellman (D-Md.) had introduced a bill to provide that the federal employee service and indemnity health benefits plans require second opinions in the case of elective surgery covered under those plans. Hearings on the proposed measure were held in the summer of 1979.

Medical Community Reaction

In general, organized medicine's reaction to the concept of second opinion programs is less than enthusiastic. Many feel that the program interferes with the doctor/patient relationship. Others feel that all the program does is quantify disagreements between physicians. Neither of these objections, however, are objectives of the program. Indeed, in each of the programs in existence, the sponsors indicate that if the patient does not want the initial diagnosing physician to know that a second opinion is being sought, the patient's wishes will be respected. The American College of Surgeons has not formally expressed its approval or disapproval of specific second opinion programs. The College has long felt that consultation is a desirable part of good surgical practice and does not oppose voluntary second opinion programs which are "well-planned". The College does feel that the appropriateness of surgery might be evaluated better by PSROs. Their rationale is that PSROs use predetermined criteria while second opinion programs do not.

Responses by the surgical community in areas where second opinion programs have been established vary. In New York City, there was little opposition or outcry when the Cornell program was implemented. Acceptance of the programs in the area has increased as time passed. In the Detroit Tricounty area, however, there initially was strong surgeon resistance. By and large, the surgical community was apprehensive that the program would interfere with the doctor/patient relationship and would increase the liability of the first and second opinion surgeons. Indeed, the Michigan State Medical Society Council had approved a resolution to take "whatever steps were necessary" to prevent the implementation of the second opinion program. Chiefly as a result of the area's leading surgeon's acceptance of the program, the second opinion program was inaugurated in July 1977, on schedule. The surgical community's acceptance of the program has increased with time, and many surgeons who initially did not agree to participate now have submitted their credentials for review.

While there are some individual physicians and surgeons who do not like their judgment questioned, in the majority of cases, most would welcome a second opinion. The indications for many surgical procedures are imprecise, at best, and there is room for discussion on most conditions, surgical or medical. Indeed, to a large extent, most surgical procedures have not been scientifically evaluated in well-controlled studies, as compared to drug efficacy tests, for example.

Conclusion

Although surgery can make a very real and often dramatic improvement in the quality of life, there are risks inherent in any surgical procedure. While certain operations have a comparatively low risk factor, there are others which have a high risk of major complications and mortality. In addition to the surgical procedure itself, anesthesia alone carries a degree of risk. It has been estimated that two of every 10,000 persons undergoing surgery die simply form the anesthesia. The patient's general medical condition, too, often can present an additional degree of risk. Obese individuals, those with diabetes, heart conditions or hypertension are more likely to suffer complications and have a higher rate of mortality than those who have no underlying medical conditions.

On a micro-level, individuals confronted with surgery are concerned about the risks involved and want to be reassured that the risks are worth enduring the pain and discomfort of the procedure, not to mention the lost work time due to convalescence. On a macro-level, society in general must decide what resources should be made available for medical care.

There is universal concern about the high cost of health care and of the limited resources (public and private) for various health and welfare services. In the past, the attitude frequently taken was that no cost can or should be spared in an effort to save human life. It becomes necessary, however, that national priorities be set to ensure that resources allotted to medical care will be reviewed as equitable, appropriate and responsive to the public need. In order to attain this goal, it is necessary to improve public understanding. Both the medical community and the public at large must be educated so that intelligent recommendations and/or decisions can be made. Information on outcomes as well as costs of medical care should be disseminated. Second opinion programs are designed to achieve such an objective.

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APPENDIX A

Listing of Participating Security Welfare Funds in the Cornell Second Opinion Elective Surgery Program

Voluntary Programs

District Council 37 Health & Security Plan* (7/72)

New York State Department of Civil Service (2/76)

Silk and Rayon Printers and Dyers Association* (7/74)

Trucking Employees of North Jersey* (7/72)

Typo-League Benefit Plan* (1/75)

Typo-Publishers Newspaper Welfare Fund* (1/75)

Allied Textile Printers Co Corporation* (7/74)

Teamsters Local Union 707 (6/79) (going mandatory 6/80)

Mandatory Programs

Building Service 32B-J Health Fund (voluntary 1/76, mandatory 1/77)

New York City District Council of Carpenters Welfare Fund (voluntary 10/75, mandatory 7/78)

Storeworkers Security Plan (2/72)

Teamsters Union Local 814 (1/77)

Jewelry Manufacturers Association Local No. 1 Welfare Fund (7/79)

Amalgamated Meat Cutters and Retail Food store employees, Local 342 (11/79)

Heavy & General Laborers Welfare Fund of New Jersey (6/80)

*No longer processing data for these funds

(   ) = Date of inception of the second opinion program

APPENDIX B

General Intake Procedures and Policies: Cornell Second Opinion Elective Surgery Program

Procedures

1. Determine if the patient is eligible for a second opinion consultation.
2. Explain the program to the patient.
3. Fill out intake forms by obtaining pertinent demographic/medical information from the patient.
4. Have the patient select a consultant specializing in the appropriate field.
5. Make the appointment for the patient and confirm time, place, and date of appointment with the patient by telephone.
6. Send appropriate forms/records to consultant for completion. Remind patient to bring appropriate records/test results to the examination.
7. Process consultant's bill and all pertinent forms returned by the consultant.
8. Send intake form and consultant form to Cornell for processing.

Policies

1. The benefit is exclusively for those persons who are eligible for a second opinion who have been told by a physician (surgeon or other) that elective surgery is necessary. In general, persons who have been told that they "may" need surgery or who are being observed or followed to determine if the need for surgery arises are not eligible.
2. The benefit is for elective surgery only. Be sure to establish that it is not an emergency situation involving such things as bleeding, bone fractures, appendicitis, or the like.
3. The patient should be instructed to bring all X-ray and/or laboratory results to the consultation. Any additional tests performed will be paid for by the sponsoring organization.
4. Inform the patient that if he/she must cancel the appointment, it should be done within 48 hours, if possible.

APPENDIX C

Date of Consultant's Report: ____________ UNION NAME Intake Date: ____________

Intake Form Sample

Member's Name: ____________ Social Security No.: ____________

Patient's Name: ____________ Age: ______

Address: ____________ Home Phone: ____________

Apt. ______ Zip ______ Work Phone: ____________

Presently Employed At: ____________ How long? ___ Title: ____________

Operation Suggested by PMD: ____________

PMD Name: ____________ PMD Form Sent ______ Ancillary Tests ____________

Address: ____________ Phone: ____________

Consultant's Name: ____________ Appt. Date ______ Time ______

PATIENT PROFILE

A. COUNTY OF RESIDENCE
- (1) Manhatten
- (2) Brooklyn
- (3) Bronx
- (4) Queens
- (5) Richmond
- (6) Connecticut
- (7) Westchester
- (8) Long Island (Nassau, Suffolk)
- (9) Bergen
- (10) Hudson
- (11) Passaic
- (12) Essex
- (13) Union
- (14) Monmouth
- (15) Other ______

B. RELATIONSHIP TO MEMBER
- (1) Member
- (2) Spouse
- (3) Child
- (4) Other dependent
- (5) Unknown

C. AGE
- (1) Under 5
- (2) 5-14
- (3) 15-24
- (4) 25-44
- (5) 45-64
- (6) 65 and over
- (7) Unknown

D. SEX
- (1) Male
- (2) Female

E. HEALTH INSURANCE - PHYSICIAN
- (1) GHI-C
- (2) GHI-E
- (3) HIP
- (4) Blue Shield
- (5) Prudential
- (6) John Hancock
- (7) Metro Life
- (8) Self-insured
- (9) Medicare
- (10) Other ______
- (11) Unknown

F. HEALTH INSURANCE - HOSPITAL
- (1) Blue Cross
- (2) Major Medical
- (3) John Hancock
- (4) Travelers
- (5) Self-insured
- (6) Medicare
- (7) Other ______
- (8) Unknown

G. PRESURGICAL PROGRAM CONTACT
- (1) First
- (2) Second
- (3) Third
- (4) Fourth or more
- (5) Unknown

H. OPERATION SUGGESTED BY PMD
- (1) Heart surgery (L.0)
- (2) Cholecystectomy (L.1)
- (3) GI (Upper and Lower) (L.1)
- (4) Hemorrhoidectomy (L.1)
- (5) Incision, excision & suture for mass, cyst, or lesion of skin (L.1)
- (6) Mastotomy, mastectomy & other operations of the breast (L.1)
- (7) Repair of hernia, inguinofemoral (groin) (L.1)
- (8) Thyroidectomy (L.1)
- (9) Varicose vein excision and ligation (L.1 or L.0)
- *(10) Other mass, cyst or lesion (L.1)
- (11) Dilation & Curettage (L.2)
- (12) Hysterectomy, not radical (L.2)
- (13) Hysterectomy, radical (L.2)
- (14) Hysterectomy, all types (L.2)
- (15) Removal of cataract (L.3)
- *(16) Other eye (L.3)
- (17) Bunionectomy (L.4)
- *(18) Other foot surgery (L.4)
- (19) Excision of intervertebral disc (L.4)
- *(20) Other vertebral column (L.4)
- (21) Hand surgery (L.4)
- (22) Hip surgery (L.4)
- (23) Knee surgery (L.4)
- *(24) Other operations on bones & joints (L.
- *(25) Other operations on fascia, tendons, muscles (L.4 or L.1)
- (26) Deviated septum (L.5)
- (27) Ear surgery (L.5)
- (28) Tonsillectomy, with and without adenoidectomy (L.5)
- (29) Operations on kidney (L.7 or L.1)
- (30) Operations on bladder (L.7)
- (31) Prostatectomy (L.7)
- (32) All other ____________

* Describe "other" 10,14,16,18,24, or 25.

REFERRING PHYSICIAN PROFILE (PMD)

I. BOARD CERTIFICATION
- (1) D-O (Ophthalmology)
- (2) D-OG (Obstetrics & Gynecology)
- (3) D-OL (Otolaryngology; ENT)
- (4) D-OS (Orthopedics)
- (5) D-S (Surgery)
- (6) D-TS (Thoracic Surgery)
- (7) D-U (Urology)
- (8) D-PS (Plastic Surgery)
- (9) D-NS (Neurological Surgery)
- (10) D-IM (Internal Medicine)
- (11) Other D-_______________
- (12) Not Board Certified
- (13) Not listed in medical directory
- (14) Insufficient information to locate in medical directory

J. DATE GRADUATED MEDICAL SCHOOL
- (1) Before 1920
- (2) 1920-1929
- (3) 1930-1939
- (4) 1940-1949
- (5) 1950-1959
- (6) 1960-1969
- (7) After 1970
- (8) Unknown

K. SITE OF PATIENT CONTACT
- (1) Hospital clinic or emergency room
- (2) HIP group
- (3) Private practice or group practice other than HIP
- (4) Local 32B Health Center
- (5) Panel physician
- (6) Unknown or not given by patient

CONSULTANT PROFILE

L. SURGICAL SPECIALTY
- (1) Cardiovascular
- (2) General Surgery
- (3) Obstetrics & Gynecology
- (4) Ophthalmology
- (5) Orthopedics
- (6) Otolaryngology (ENT)
- (7) Plastic Surgery
- (8) Urology
- (9) Other _________________

M. LOCATION OF CONSULTANT
- (1) NYH
- (2) Albert-Einstein
- (3) NYU
- (4) HIP-LI
- (5) Downstate
- (6) East Nassau
- (7) Columbia-Presbyterian
- (8) Christ Hospital
- (9) Hackensack
- (10) St. Joseph's
- (11) Valley
- (12) Other _________
- (13) Mt. Sinai
- (14) Montefiore

PATIENT OUTCOMES

N. CONFIRMATION FOR SURGERY
- (1) Confirmed
- (2) Not Confirmed
- (3) Other ______________

O. IF CONFIRMED, SITE FOR SURGERY
- (1) Procedure done in office by consultant
- (2) Patient to be hospitalized
- (3) Unknown

P. Did consultant recommend referral to another physician?
- (1) Yes _________________________
- (2) No

Q. PHYSICIAN ASSUMING PATIENT'S CASE
- (1) Consultant
- (2) Referring physician
- (3) Unknown

R. ANCILLARY TESTS PERFORMED
- (1) Pap test
- (2) Gall bladder series
- (3) Cystoscopy
- (4) IVP
- (5) X-rays of musculoskeletal system
- (6) Mammogram
- (7) Other __________________________
- (8) None

S. Was a third consultation to determine the need for surgery requested through this program by the patient?
- (1) Yes
- (2) No
- (3) Unknown

T. If yes, what were the results of the third consultation?
- (1) Confirmed
- (2) Not Confirmed
- (3) Unknown

BUILDING SERVICE 32B-J HEALTH FUND

Presurgical Screening Consultant Form

Soc. Sec. No. ☐☐☐☐☐☐☐☐☐

Patient's Name: ______________________________

Address: ______________________________ Zip __________

Referring Physician's Name: ______________________________

Consultant's Name: ______________________________

Surgical Procedure To Be Screened: ______________________________
(If more than one procedure, please fill out separate forms.)

Date of Consultation: ____ | ____ | ____
Mo. Day Year

Please check appropriate response under each item. Retain one copy for your files and return two copies to the organization named above. Return as quickly as possible.

Did you confirm the recommended surgical procedure? (28)

☐ (1) Yes
☐ (2) No
☐ (3) Other ______________________________
(Explain)

If confirmed, site for surgery. (29)

☐ (1) Procedure done in office by consultant
☐ (2) Patient to be hospitalized
☐ (3) Unknown

Do you recommend referral to another surgeon for further evaluation of this problem? (30)

☐ (1) Yes, to: ______________________________

Reason: ______________________________ (31)

☐ (2) No

Do you recommend referral to another physician for evaluation of any medical or other surgical problem? (32)

☐ (1) Yes, to: ______________________________

Reason: ______________________________ (33)

☐ (2) No

36

If the recommended surgical procedure was not confirmed, is another form of treatment recommended? (34)

- ☐ (1) Yes
- ☐ (2) No

If Yes, what did you recommend? (35)

- ☐ (1) Medication
- ☐ (2) Physical therapy
- ☐ (3) Diet therapy
- ☐ (4) Regular examination by a physician (related to procedure screened and more frequent than once a year)
- ☐ (5) Other ______________________________

Physician assuming patient's case. (36)

- ☐ (1) Consultant
- ☐ (2) Referring physician
- ☐ (3) Other ______________________________
- ☐ (4) Unknown

If you performed any ancillary tests, what were they? (37)

- ☐ (1) Pap test
- ☐ (2) Gallbladder series
- ☐ (3) Cystoscopy
- ☐ (4) IVP
- ☐ (5) X-rays of musculo-skeletal system
- ☐ (6) Arthrogram
- ☐ (7) Mammogram
- ☐ (8) Nerve conduction tests
- ☐ (9) None
- ☐ (10) Other ______________________________
  (Specify)

What diagnosis did you assign to this patient's condition? (38)

____

(Write exact diagnosis and check appropriate item below.)

- ☐ (1) Uterine fibroma or other benign neoplasm of the female genitalia
- ☐ (2) Malignant neoplasm of the female genitalia
- ☐ (3) Varicose veins
- ☐ (4) Hemorrhoids
- ☐ (5) Hypertrophy of the tonsils and adenoids
- ☐ (6) Cholelithiasis
- ☐ (7) Cholecystitis
- ☐ (8) Inguinal hernia
- ☐ (9) Cataract
- ☐ (10) Not listed
- ☐ (11) No pathology
- ☐ (12) Not determined

____
Signature of Consulting Physician

APPENDIX D

Listing of Surgical Procedures and ICDA code: Cornell Second Opinion Elective Surgery Program

PROCEDURE	ICDA CODE [+]
Heart Surgery	29.0 - 29.9; 30.2 - 30.7
Cholecystectomy	43.5
GI (Upper and Lower)	47.0 - 47.9; 48.0 - 48.9
Hemorrhoidectomy	51.3
Incision, excision, suture for mass cyst, lesion of skin	92.0, 92.1, 92.4, 92.5, 92.9, 93.0
Mastotomy, Mastectomy, and other operations of the breast	65.0 - 65.9
Repair of hernia, inguinofemoral	38.2 - 38.5
Thyroidectomy	22.0 - 22.3
Varicose Vein, excision and ligation	24.4
Other mass, cyst, or lesion*	**
Dilation and Curettage	70.3
Hysterectomy	68.0 - 69.7
Removal of Cataract	14.0
Other Eye	6.0 - 14.9 inclusive
Bunionectomy	80.4
Other foot surgery	87.2
Excision of Intervertebral Disc	86.4
Other Vertebral Column	87.4
Hand Surgery	89.1 - 89.9
Hip Surgery	82.0 - 82.9

---

* Mass, cysts, lesions on any organ of body except skin

[+] Eighth Revision

PROCEDURE	ICDA CODE
Knee Surgery	86.5
Other operations on bones and joints	80.0 - 84.9; 86.0 - 87.9[1]
Other operations on fascia, tendons, muscles	88.0 - 89.9
Deviated Septum	19.0 - 19.9
Ear Surgery	16.0 - 16.5; 17.0 - 17.9; 18.0 - 18.9
Tonsillectomy with/without Adenoidectomy	21.1, 21.2
Operations on Kidney	54.0 - 54.9
Operations on Bladder	56.0 - 56.9
Prostatectomy	58.1, 58.2, 58.3

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[1] Except 80.4, 86.4, 86.5

APPENDIX E

Pt. # ____________

FU # ____________(18

Telephone Follow-Up Questionnaire
Of Patients Using Presurgical Consultation Benefit
First Follow-up After Consultation

____________________(12-17)

Date of Interview

____

Union

____

Union Member's Name

____

Relationship to Member

____

Patient's Name

____

If Child, Age

____

Patient's Address

____

My name is ________________ (Interviewer). I am from Cornell Medical School. I'm calling about the ____________ (Union) Presurgical Screening Program. An appointment had been arranged for you (or related patient) to go to ____________________ (Consultant's Name) to get a second opinion on whether you needed surgery for ____________________ (Diagnosis or Problem) on ________________________ (Date) (19-20).

Verify address and patient (member, spouse, child.) If patient is child, ask age.

This survey is being sponsored by the Social Security Administration which under Section 1875 of the Social Security Act requires, among other things, to study medical care practice. The answers you give to the following questions will be held in strictest confidence and will not be voluntarily released to any person or organization. This information will be used only to compile evaluations of the effectiveness of the presurgical consultation program.

Your participation in this survey is voluntary, and whether or not you participate will not in way affect your eligibility for these or other present or future benefits. If there are any questions you may not wish to answer, you will not have to. If you would like, we will be glad to send you a copy of this statement. Would you like to have this?

( ) Yes ( ) No

I would like to ask you some questions about the program and how you have been since your appointment with ________________.
Consultant's Name

(21) Were you employed at the time of the consultation? ( ) Yes
( ) No

(22) (If no) Were you retired? ( ) Yes ( ) No

(23) (If no) Were you temporarily not working? ( ) Yes ( ) Nc

(24) Why?____

(25-27) (If yes) What type of work did you do at the time of the consultation?______________________________

(28) Are you employed now? ( ) Yes ( ) No

(29) (If no) Are you retired? ( ) Yes ( ) No

(30) (If no) Are you temporarily not working?

( ) Yes ( ) No

(31) Why?____

(32) (If yes) What work are you doing now?

____

Who was the doctor who first said you (or related person) needed surgery?____

What is Dr. ____________________Address:____________________

____

(35) Was the surgical consultation helpful?

( ) Helpful ( ) Not Helpful

(36) (if helpful) In what way did you find it helpful?

____

(37) If the screening program had not existed, do you think you (or related person) would have gone to a second doctor to get another opinion before having surgery?

( ) Yes ( ) No ( ) Don't Know

(38) Remarks:____

(39) If the screening program were discontinued, and you again were told you (or related person) needed surgery, would you week a second opinion from a physician?

( ) Yes ( ) No ( ) Don't Know

(40) Remarks:____

(41) Would you say your health today is

( ) Excellent ( ) Good ( ) Fair ( ) Poor

(42) Would you say your health today is

( ) better ( ) worse or ( ) the same

as when you had your consultation?

(43) Following the surgical consultation, did you have the surgery done?

( ) Yes ( ) No

These questions are only for persons who had surgery.

(44-47) On what date was the surgery done?

(48-49) ________ Month ________ Day ________ Year

(50-51) What was the name of the operation that was done?

(52-53) ______________________________

(54) (If name of operation is known) Could you tell me what was done during the operation?

____

(57-58) Why did you have the surgery done?

(59-60) ______________________________

____

(61) What was the name of the doctor who performed the surgery?

____

What is the address of the doctor who performed the surgery?

____

(62) Where was the surgery performed?

( ) In the doctor's office
( ) In a clinic
( ) In a hospital

(63) (If in a hospital) Did you stay overnight in the hospital?

( ) Yes ( ) No

(64-66) (If yes) How many nights did you stay overnight in the hospital? ______________

I would now like to ask you some questions about the medical services you received after you left the hospital.

(67) After the surgery, did you continue to see a doctor?

(68) ( ) Yes ( ) No

(69) (If yes) Was this the doctor who did the surgery?

( ) Yes ( ) No

(If no) What was the name of the doctor?

____

(12) Did you receive any treatment in your doctor's office?

( ) Yes ( ) No

(13-14) (If yes) How many visits did you make to your doctor's office? __________

When your doctor asked you to come back to his office, did you receive?

(15-16)	(17-18) How many	(19-20) How often
Regular examination		
Medication		
Physical Therapy		
Diet Therapy		
Cast or Brace		

Did you receive any other treatment in the doctor's office that I have not mentioned?

Treatment	How many	How often

(21) Did you have to go back to a hospital for one night or more for ______________________________?
(condition)

( ) Yes ( ) No

(22-24) (If yes) How many nights were you in the hospital?________

While you were in the hospital, did you receive?

(25-26) (27-28) How many (29-30) How often

Medication
Radiation Therapy
Physical Therapy
Diet Therapy
Cast or Brace

Did you receive any other treatment in the hospital that I have not mentioned?

Treatment How many How often

(31) Did you have to go back to the hospital for treatment without staying overnight? ( ) Yes ( ) No

(32-33) (If yes) How many days did you go to the hospital without staying overnight? ______________

When you went back to the hospital for treatment without staying overnight, did you receive?

(34-35) (36-37) How many (38-38) How often

Regular examination by a physician
Medication
Radiation Therapy
Physical Therapy
Diet Therapy
Cast or Brace

Did you receive any other treatment which I have not mentioned?

Treatment	How Many	How Often

After the consultation, for how many days were you (or related person) unable to perform your normal activities because of

_______________? (condition)

(40-42) _______________days

Did you receive disability payments?

(45) ( ) Yes ( ) No ( ) Don't know or remember

I would lastly like to ask if you have received any other medical care, not related to __________________. (44)

(45) Did you have to stay overnight in a hospital?

( ) Yes ( ) No

(46-48) (If yes) How many nights did you stay over? _________

(49) Did you have to go for treatment to a hospital without staying overnight? ( ) Yes ( ) No

(50-51) (If yes) How many days did you go to the hospital without staying overnight?

(52) Did you receive any treatment in your doctor's office?

( ) Yes ( ) No

(53-54) (If yes) How many visits did you make to your doctor's office? _______________

These questions are only for persons who did not have surgery.

(10-11) Why did you decide not to have surgery?

(12-13) ____

____

(14) Was any medical treatment necessary for ________________?
(condition)

____

(15) If treatment was necessary, did you continue to see a doctor for treatment? ( ) Yes ( ) No ( ) Don't know or remember

(16) (If yes) What is the name of the doctor?__________________

Dr. ________________is:

( ) The first doctor who recommended surgery
( ) The consultant
( ) Another doctor

I would now like to ask you some questions about the medical treatment you received.

(12) Did you receive any treatment in your doctor's office?

( ) Yes ( ) No

(13-14) (If yes) How many visits did you make to your doctor's office? __________________

When your doctor asked you to come back to his office, did you receive?

(15-16)	(17-18) How many	(19-20) How often
Regular examination		
Medication		
Physical Therapy		
Diet Therapy		
Cast or Brace		

Did you receive any other treatment in the doctor's office that I have not mentioned?

Treatment	How many	How often

(21) Did you have to go back to a hospital for one night or more for ______________________________?
(condition)

( ) Yes ( ) No

(22-24) (If yes) How many nights were you in the hospital?

While you were in the hospital, did you receive?

(25-26)	(27-28) How many	(29-30) How often
Medication		
Radiation Therapy		
Physical Therapy		
Diet Therapy		
Cast or Brace		

Did you receive any other treatment in the hospital that I have not mentioned?

Treatment	How many	How often

(31) Did you have to go back to the hospital for treatment without staying overnight? ( ) Yes ( ) No

(32-33) (If yes) How many days did you go to the hospital without staying overnight?______________________

When you went back to the hospital for treatment without staying overnight, did you receive?

(34-35)	(36-37) How many	(38-39) How often
Regular examinations by a physician		
Medication		
Radiation Therapy		
Physical Therapy		
Diet Therapy		
Case or Brace		

Did you receive any treatment which I have not mentioned?

Treatment	How many	How often

After the consultation, for how many days were you (or related person) unable to perform your normal activities because of __________________(condition)?

(40-42) __________________days. Did you receive disability payments?

(43) ( ) Yes ( ) No ( ) Don't know or remember

I would lastly like to ask if you have received any other medical care, not related to___________________(condition).

(44) Describe condition not related to diagnosis.

____

(45) Did you have to stay overnight in a hospital?

( ) Yes ( ) No

(46-48) (If yes) How many nights did you stay over?__________

(49) Did you have to go for treatment to a hospital without staying overnight? ( ) Yes ( ) No

(50-51) (If yes) How many days did you go to the hospital without staying overnight?_______________________

(52) Did you receive any treatment in your doctor's office?

( ) Yes ( ) No

(53-54) (If yes) How many visits did you make to your doctor's office? _________________

Surgery?____________ Patient #_______________

Telephone Follow-Up Questionnaire
Of Patients Using Presurgical Consultation Benefit
Second Follow-Up After Consultation

________________________ Date of Interview	_____________________ Union
________________________ Union Member's Name	_____________________ Relationship to member
________________________ Patient's Name	_____________________ If Child, Age
________________________ Patient's Address	
________________________	

My name is ___________________ (interviewer). I am from Cornell Medical School.
I'm calling about the ______________ (union) Presurgical Screening Program.
You were contacted by us on ___________ (date) and asked about medical
care you had for __________________ (Dx or problem), and whether you had surgery
after your appointment with ____________________ (consultant) on __________ (date)
to get a second opinion.

Verify address and patient (member, spouse, child).

This survey is being sponsored by the Social Security Administration which under Section 1875 of the Social Security Act requires, among other things, to study medical care practice. The answers you give to the following questions will be held in strictest confidence and will not be voluntarily released to any person or organization. This information will be used only to compile evaluations of the effectiveness of the presurgical consultation program.

Your participation in this survey is voluntary, and whether or not you participate will not in way affect your eligibility for these or other present or future benefits. If there are any questions you may not wish to answer, you will not have to. If you would like, we will be glad to send you a copy of this statement. Would you like to have this?

( ) Yes ( ) No

I would like to ask you some questions about the program and how you have been since you were contacted by us.

Would you say your health today is: ( ) Excellent ( ) Good
( ) Fair ( ) Poor

Would you say your health today is ( ) Better ( ) Worse
or ( ) the same
as when you had your consultation?

(If surgery indicated in previous questionnaire, confirm that information, find out which hospital ____________________.
unless performed in doctor's office, then continue on page 8.
If surgery was not done as of the previous telephone interview, ask the following, then continue on next page if surgery was done, or go to page 8 if surgery was not done.)

Did you have the surgery done after you were contacted on

____________?
(date)

(These questions are only for persons who had surgery since the last telephone follow-up).

On what date was the surgery done?

______________/____________ ____/_______________
Month Day Year

What was the name of the operation that was done?

____

(If name of operation is known) could you tell me what was done during the operation?______________________________

____

Why did you have the surgery done?_________________________

____

What was the name of the doctor who performed the surgery?

Was this the consultant ____ PMD___ Other_____NA____)

____

What is the address of the doctor who performed the surgery?

____

Where was the surgery performed?

- ( ) In the doctor's office
- ( ) In a clinic
- ( ) In a hospital

(If in a hospital): Which hospital_____________________________
(name and location)

Did you stay overnight in the hospital? (   ) Yes (   ) No

(If yes) How many nights did you stay overnight in the hospital?

____

After you left the hospital, after the surgery, did you continue to see a doctor? (   ) Yes (   ) No

(if yes) Was this this doctor who did the surgery?

(   ) Yes (   ) No

(if no) What was the name of the doctor? ______________________

Was this the Consultant___ PMD___ Other___ NA___)

Did you receive any treatment in your doctor's office?

(   ) Yes (   ) No

(if yes) How many visits did you make to your doctor's office?

____

When your doctor asked you to come back to his office, did you receive?

	How Many	How Often
Regular examination		
Medication		
Physical therapy		
Diet therapy		
Case or brace		

Did you receive any other treatment in the doctor's office that I have not mentioned?

Treatment	How Many	How Often

Did you have to go back to a hospital for one night or more

for ____________________________________?
(condition)

( ) Yes ( ) No

(if yes) How many nights were you in the hospital?__________

While you were in the hospital did you receive?

	How many	How often
Medication		
Radiation therapy		
Physical therapy		
Diet therapy		
Cast or brace		

Did you receive any other treatment in the hospital that I have not mentioned?

Treatment	How many	How often

Did you have to go back to the hospital for treatment without staying overnight? ( ) Yes ( ) No

(if yes) How many days did you go the hospital without staying overnight?_______________________

When you went back to the hospital for treatment without staying overnight, did you receive?

	How many	How often
Regular examinations by a physician		
Medication		
Radiation therapy		
Physical therapy		
Diet therapy		
Cast or brace		

Did you receive any other treatment which I have not mentioned?

Treatment	How many	How often

DISABILITY

Since we contacted you in ____________, for how many days
(date)
____________ were you (or related person) unable to perform
(no. of days)
your normal activities because of ______________________?
(condition)
Did you receive disability payments?

( ) Yes ( ) No ( ) Don't know or remember

OTHER MEDICAL CARE

I would lastly like to ask if you have received any other medical care after your consultation not related to __________.

Did you have to stay overnight in a hospital?

( ) Yes ( ) No

(if yes) How many nights did you stay over?__________________

Did you have to go for treatment to a hospital without staying overnight? ( ) Yes ( ) No

(if yes) How many days did you go to the hospital without staying overnight?______________________________________

Did you receive any treatment in your doctor's office?

( ) Yes ( ) No

(if yes) How many visits did you make to your doctor's office?

____

Are you employed now? ( ) Yes ( ) No

(if no) Are you retired? ( ) Yes ( ) No

(if no) Are you temporarily not working? ( ) Yes ( ) No

Why?____

(if yes) What work are you doing now?________________________

(These questions are only for persons who either had surgery prior to the first contact, or did not have surgery to date).

Was any medical treatment necessary for ____________________
(condition)
since we contacted you in ____________________?
(date)
(Include regular examinations, as well as all other types listed for response which relate to diagnosis.) ____________
____

If treatment was necessary, did you continue to see a doctor for treatment? ( ) Yes ( ) No ( ) Don't know or remember

(if yes) What is the name of the doctor? ______________________

Dr. __________________________ is: ( ) the first doctor who recommended surgery
( ) the consultant
( ) another doctor

I would now like to ask you some questions about the medical treatment you received.

Did you receive any treatment in your doctor's office since we contacted you in ____________________? (Include any exams related
(date)
to diagnosis) ( ) Yes ( ) No

(if yes) How many visits did you make to your doctor's office?

____

When your doctor asked you to come back to his office, did you receive?

	How many	How often
Regular examination		
Medication		
Physical therapy		
Diet therapy		
Case or brace		

Did you receive any other treatment in the doctor's office that I have not mentioned?

Treatment	How many	How often

Did you have to go back to a hospital for one night or more

for ________________________________ since we contacted
(condition)
you in ______________________? ( ) Yes ( ) No

(if yes) How many nights were you in the hospital?__________

While you were in the hospital, did you receive?

Medication
Radiation therapy
Physical therapy
Diet therapy
Cast or brace

Did you receive any other treatment in the hospital that I have not mentioned?

Treatment	How many	How often

Did you have to go back to the hospital for treatment without staying overnight since we contacted you in ______________?
(date)

( ) Yes ( ) No

(if yes) How many days did you go the hospital without staying overnight?____

When you went back to the hospital for treatment without staying overnight, did you receive?

	How many	How often
Regular examinations by a physician		
Medication		
Radiation therapy		
Physical therapy		
Diet therapy		
Cast or brace		

Did you receive any other treatment which I have not mentioned?

Treatment	How many	How often

DISABILITY

Since we contacted you in __________, for how many days were you
(date)
(or related person) unable to perform your normal activities because of ________________? ____________days
(condition)

Did you receive disability payments?

( ) Yes ( ) No ( ) Don't know or remember

OTHER MEDICAL CARE

I would lastly like to ask if you have received any other medical care since your consultation not related to ________________.
(condition)

Describe condition not related to diagnosis. (Retrieve date of any surgical procedure). ____________________________________

____

Did you have to stay overnight in a hospital? ( ) Yes ( ) No

(if yes) How many nights did you stay over?__________________

Did you have to go for treatment to a hospital without staying overnight? ( ) Yes ( ) No

(if yes) How many days did you go to the hospital without staying overnight?____

Did you receive any treatment in your doctor's office?

( ) Yes ( ) No

(if yes) How many visits did you make to your doctor's office?

____

Are you employed now? ( ) Yes ( ) No

(if no) Are you retired? ( ) Yes ( ) No

(if no) Are you temporarily not working? ( ) Yes ( ) No

Why?____

(if yes) What work are you doing now?____________________________

Pt. #___________ Surgery?_________

Telephone Follow-Up Questionnaire
Of Patients Using Presurgical Consultation Benefit
Third Follow-Up After Consultation

____________________ Date of Interview	__________________________ Union
__________________________ Union Member's Name	__________________________ Relationship to Member
__________________________ Patient's Name	_________________ If Child, Age
__________________________ Patient's Address ___________________________	

My name is _______________________. I am from Cornell Medical
(interviewer)
School. I'm calling about the ___________ Presurgical Screening
(union)
Program. You were contacted by us on ________________ and asked
(second FU date)
about medical care you had for __________________, and whether
(Dx or problem)
you had surgery after your appointment with __________________
(consultant's name)
on __________________to get a second opinion.
(date)

Verify address and patient (member, spouse, child).

This survey is being sponsored by the Social Security Administration which under Section 1875 of the Social Security Act requires, among other things, to study medical care practice. The answers you give to the following questions will be held in strictest confidence and will not be voluntarily released to any person or organization. This information will be used only to compile evaluations of the effectiveness of the presurgical consultation program.

Your participation in this survey is voluntary, and whether or not you participate will not in any way affect your eligibility for these or other present or future benefits. If there are any questions you may not wish to answer, you will not have to. If you would like, we will be glad to send you a copy of this statement. Would you like to have this?

( ) Yes ( ) No

Have you had surgery performed for ________________ since
(condition)
__________________? ( ) Yes ( ) No
(date of last FU)

If YES, when and what type of surgery.________________________

____

ONLY ASK FOLLOWING TO THOSE WHO RESPONDED NO:

Why haven't you had surgery performed?__________________________

____

Was any medical treatment necessary for __________________ since
(condition)
we contacted you on __________________? ( ) Yes ( ) No
(date of last call)

Have you returned to see your doctor for ________________ since
(condition)
________________? ( ) Yes ( ) No
(date of last call)

(If yes) Did you receive:

Treatment	Times/Month
Medication (type)	
Regular examination	
Physical therapy	
Diet therapy	
Cast or brace	
Other ___________	

Did you receive any other treatment in the doctor's office or in the hospital that I have not mentioned?

Treatment	How many	How often

BUILDING SERVICE 32B-J HEALTH FUND
25 EAST 26TH STREET • NEW YORK, N. Y. 10010
Telephone — 686-8600

COST BENEFIT ANALYSIS QUESTIONNAIRE

PATIENT'S NAME: ______________________________ CASE#: ______________

DATE OF INTERVIEW: ___________________________

Initiating Statement

Hello. I'm ______________________________ and I'm calling from the Building Service Health Fund to ask you some questions. The trustees have asked me to contact some members to see how effective our second opinion program is. By answering some questions you can help us to decide on the kind of benefits that will be best for you. This survey is being sponsored by the Health Care Financing Administration of the U.S. Department of Health, Education and Welfare. Your participation is voluntary and your answers will be held in strict confidence. No personally identifying information will be released to the Federal government or anyone not involved in this study. If you don't want to answer any questions you don't have to. Can you give me some of your time to answer some questions?

Would you like us to send you a copy of this statement?

yes___________ no____________

PART I - EMPLOYMENT, EARNINGS AND EXTENT OF DISABILITY

1.) Since the time of your surgery SSO have you been employed? full time_____ Part time_____ No

(if answer is full or part time, ask Questions 2 thru 11. If answer No ask Question

2. What kind of work are you doing?______________________________

3.) Since you had your surgery SSO how much time have you missed from work because of

______________________? Main Job: hrs_____ Days_____ Weeks_____
condition
Overtime: hrs_____ Days_____ Weeks_____
Didn't miss time from work_____

4.) How many hours a week do you work? Hours per week__________

5.) What is your salary before after taxes?

per/hr_______ per/wk_______ per/mos_______ per/yr_______

6.) Since your surgery SSO up to present time about how many hours per week do you work

overtime? Hours per week__________

7.) How are you paid for overtime?__________

8.) Since your surgery SSO have you earned additional income from other jobs? Yes_____ No_____

if answer Yes, ask Questions 9 & 11).

9.) How much do you make before taxes from these (this) job(s)?

per/hr_______ per/wk_______ per/mos_______ per/yr_______

10.) How many hours do you work at these (this) job(s)? Hours per week__________

11.) Since you had your surgery SSO how much time have you missed from this (these) additional

job(s) because of______________________?
condition

hrs_______ days_______ wks_______ didn't miss time_______

(Skip to Question 44)

12.) If you are not employed are you looking for work? Yes_______ No_______

(if answer Yes, ask Questions 13 thru 20. If answer no, ask Question 21).

13.) Are you not working because you were: laid-off_______ Temp. Disab._______ Other_______

14.) Did your______________________have anything to do with you not working?
condition

Yes_____ No_____

Remarks:______________________________

____

____

15.) When was the last time you worked? Dates: From ____________ To ____________

16.) At your last job what was your salary before taxes?

per/hr ________ per/wk ____________ per/mos ____________ per/yr ____________

7.) At your last job about how many hours per week did you work overtime?

Hours per week ______________

18.) How were you paid for overtime? ________________

19.) Did you earn additional incomes from other job(s)?

Yes ________ No __________

20.) How much did you make before/after taxes from this (these) job(s)

per/hr ________ per/wk ________ per/mos ________ per/yr __________ and how many hours did you work a week? Hours/week ______________

(Skip to Question 44)

21.) Since your surgery/SSO have you been:

1). housewife __________ (questions 22 thru 26)
2). student __________ (questions 27 thru 36)
3). retired __________
4). perm. Disab. __________ questions 37 thru 43
5). other __________

(Questions 22 thru 26 apply only if housewife)

22.) Since you had surgery/SSO has the ____________________ kept you from your usual
condition
household activities? Yes____ No____

23.) Since your surgery/SSO how much of your household activities are you unable to perform because of ____________________? All____ Most____ None______
condition

24.) For how many days were you unable to perform your usual household activities?

Number of days ______________

25.) Have you had to ask anyone to help you do your household activities? Yes_____ No_____

26.) Probe (hired help, family, friend, salary, amount of work in hours, days or weeks):

____

____

____

(Skip to Question 44)

(Questions 27 thru 36 apply only if student)

27.) Since the time of your surgery SSO your Father's/Mother's occupation has been?

Father's ____________________ Mother's ____________________

28.) Since your surgery SSO how much time has your Father/Mother missed from work because of your ____________ ____________?
condition

Father: main job - Hours ________ Days ________ Weeks ________
overtime - Hours ________ Days ________ Weeks ________
Did not miss time from work ________

Mother: main job - Hours ________ Days ________ Weeks ________
overtime - Hours ________ Days ________ Weeks ________
Did not miss time from work ________

29.) How many hours a week does your Father/Mother work?

Father's hours: ________ Mother's hours: ________

30.) What is your Father's/Mother's salary before after taxes?

Father's: Per hr ________ Per Wk ________ Per Mos ________ Per Yr ________
Mother's: Per hr ________ Per Wk ________ Per Mos ________ Per Yr ________

31.) How much overtime does your Father/Mother work a week?

Father's hours ________ Mother's hours ________

32.) How is your Father/Mother paid for overtime? Father $ ________ Mother $ ________

33.) Since your surgery SSO has your Father Yes ____ No ____ Mother Yes ____ No ____ earned additional income from other jobs?

(If answer Yes, ask Question 30)

34.) How much does your Father/Mother make before taxes from these (this) job(s)?

Father: Per hr ________ Per Wk ________ Per Mos ________ Per Yr ________
Mother: Per hr ________ Per Wk ________ Per Mos ________ Per Yr ________

35.) How many hours does your Father/Mother work at these (this) additional job(s)?

Father's hours ________ Mother's hours ________

36.) Since surgery SSO how much time has your Father/Mother missed from this (these) additional job(s) because of your ____________?
condition

Father: Hours ________ Days ________ Weeks ________ Didn't miss time ________
Mother: Hours ________ Days ________ Weeks ________ Didn't miss time ________

(Skip to Question 44)

(Questions 37 thru 43 apply only if retired, permanently disabled or "other")

.) Did ______________________________ have anything to do with your permanent disability?
condition
Yes_____ No_______

Remarks: ____

____

____

38.) When was the last time you worked? Dates: From__________ To___________

39.) At your last job what was your salary before taxes?

Per Hour___________ Per Week________ Per Month__________ Per Year_________________

40.) At your last job about how many hours per week did you work overtime?

Hours per week___________________________

41.) How were you paid for overtime?_____________________

42.) Did you earn additional income from other job(s)?

43.) How much did you make before after taxes from this (these) job(s)

per/hr_________ per/wk____________ per/mos_____________ per/yr__________________ and

how many hours did you work a week? hours/week________________

(Questions 44 thru 52 apply to all patients)

44.) Since your surgery SSO have you cut down on your normal activities at home because of

____________________________? Yes______________ No______________
condition

(if patient is a student ask about Father Yes________ No________ Mother Yes_______ No___

45.) How many days? # of days__________

(If patient is a student ask about Father Yes_______ No_______ Mother Yes_____ No________)

46.) How many of these days has __________________________ kept you in bed all or most of the
condition
Number of days_____________________.

(Question 47 does not apply if patient is a student).

47.) Because of your ________________________ has anyone in your family missed time from
condition
Main job: Yes_____ No_____
Overtime: Yes_____ No_____
Additional job: Yes_____ No_____

48.) Probe (ask specifically about that job from which the person missed time.
Ask: who, what is his/her occupation, salary before taxes. how many hours he/she work
a week, how much time he/she lost from·work, how much overtime he/she lost and how muc
is paid for overtime). ____
____
____

49.) Because of your ________________________ has anyone in your family who wasn't working
condition
before gone to work? Yes______ No______

50.) Probe (who, would they have gone to work anyway, who then does their chores, what is his/her occupation, salary before taxes, how many hours he/she works a week, how much time he/she worked and if he/she stopped working, ask why?) ________________________
____
____

51.) Because of your ________________________ has anyone in your family who was working bef
condition
have to stop working? Main job: Yes_____ No_____
Additional job: Yes_____ No_____

52.) Probe (who, when did he/she stop working, what was his/her occupation, salary before taxes, how many hours he/she worked a week, how much overtime he/she worked a week and how he/she was paid for it). ____
____
____

PART II - EDUCATIONAL STATUS

53.) What is the highest grade you completed in school? Grade #________________

1). grade school____________________
2). some high school__________________
3). graudated high school______________
4). some college______________________
5). graduated college__________________
6). professional or graudate school______

[illegible]

In the next few minutes I am going to ask you some questions about the medical costs connected with your ____.
condition

54.) Do you have insurance coverage?

32B-J : Yes________No________
Medicare: Yes________No________ Your Medicare # is:__________________
Other : Yes________No________ If yes, please name insurance company:
____

(Interview Technique: First ask who paid for the given medical service. If answer: "I", ask: did you get any reimbursement from any insurance company? If yes, fill in the box, if not, then it is out of pocket payment. It might happen that patient got reimbursement from more than one insurance company. Please indicate this. If costs were reimbursed by 32B-J, you don't have to ask for costs, unless the patient has not yet submitted the claim. Intervi technique is the same for Questions 55-56).

55.) Medical Costs of Surgery

		Coverage		
Medical Service	Physician's Charge	32B-J	Other Insurance	Out of Pocket
Surgeon's Fee				
Anesthesiologist's Fee				
Hospital Cost			Blue Cross	

56.) Medical Costs after a)surgery
b)second opinion

			Coverage		
Medical Service	No. of Visits	Charge ($)	32B-J	Other Insurance	Out of Pocket
Referring Doctor Visit					
Surgeon Visit					
Other Doctor Visit					
Diagnostic Tests & Laboratory					
Drugs					
Therapies & Nursing					

57.) Did you have any other medical costs in connection with your ________ which
condition
not asked above?

Yes: the following

____

____

____

____

58.) When you went to your doctor or clinic for treatment of ________
condition
how did you get there?

Type of trans.	How many X's	round trip how long	round trip how much $
Subway			
Bus			
Car			
Taxi			
Other			

59.) Since your surgery / SSO have you gone to the Health Center for:

MEDICAL SERVICE	NUMBER OF VISITS
ANNUAL CHECK-UP	
DIAGNOSTIC TESTS (INDICATE)	

Interviewer: Additional Notes (if any) ________

____

____

____

APPENDIX F

Blue Cross
Blue Shield
of Greater New York

622 Thira enu
New York, N.Y. 10017

Paid Claim Register

PAYMENT CODE
- 1 Claim Payment
- 4 Additional Payment
- 8 Partial Credit
- 9 Full Credit

GROUP NO. 080065

MO.	YR.
05	79

TYPE TRANSACTION
- C Continuation
- A Internal Processing
- B C.O.B.
- F No Fault Credit
- W Workman's Comp
- X Presso X-Ray
- L Presso Lab
- P Presso Consultation
- M Maternity Indemnity

	INC. DATE			NAME OF PATIENT	HOSPITAL SERVICE CLAIM NUMBER	HOSPITAL SERVICE LIABILITY	PAY CODE	TYPE TRANS.	DATE PAID			
	MO.	DAY	YR.						MO.	DAY	YR.	
	01	17	79		9 043 789	553.60-	9		05	29	79	02 000065506381
E	01	23	79		W7 541 310	28.42	1		05	17	79	01 000094307308
A	01	31	79		W7 572 825	114.00	1		05	25	79	01 000
E	01	22	79		W7 484 578	56.69	1		05	03	79	01 000053121671
	01	01	79		9 139 160	654.72	1		05	15	79	02 000079185199
E	01	02	79		W7 525 280	43.55	1		05	14	79	01 000581923273
	01	10	79		9 123 063	479.24	1		05	21	79	02 000581746162
E	01	28	79		W7 524 199	56.75	1		05	24	79	01 000083461626
E	01	30	79		W7 274 054	79.21	1		05	03	79	01 000582921818
	01	30	79		9 079 635	27.44	4		05	31	79	07 000582501670
E	01	29	79		W7 241 844	51.27	1		05	01	79	01 000055426153
A	01	31	79		W7 375 313	82.18	1		05	10	79	01 000228302060
	01	02	79		9 033 462	2,156.58	1		05	01	79	09 000092363932
	01	29	79		9 072 928	22.56	4		05	31	79	03 000127367026
	01	21	79		N 259 130	39.00	1		05	15	79	02 000089242913
	01	30	79		9 085 952	307.74	1		05	22	79	01 000084529170
A	01	03	79		W7 410 178	23.22	1		05	03	79	01 000087446919
	01	30	79		9 138 419	1,258.60	4		05	31	79	14 000052246069
	01	01	79		C 903 155	1,444.80	1		05	11	79	07 000067282047
A	01	15	79		W7 496 923	48.26	1		05	29	79	01 000109344796
	01	15	79		9 254 259	762.72	1		05	17	79	03 000077267420
	01	09	79		9 030 502	26.48	4		05	31	79	04 000059383863
	01	08	79		9 142 193	409.04	1		05	07	79	04 000058329952
	01	23	79		9 085 835	963.24	1		05	03	79	03 000110345500
	01	11	79		9 050 005	2,200.80	1		05	16	79	12 000070407186
	01	12	79		9 146 321	155.76	4		05	10	79	02 000063348134
	01	12	79		9 146 321	.00-	8		05	10	79	02 000063348134
	01	23	79		N 228 888	187.30	1		05	11	79	02 000
E	01	01	79		W7 517 669	65.00	1		05	17	79	01 000130246902
E	01	03	79		W7 517 668	37.00	1		05	17	79	01 000130246902
	01	12	79		9 035 069	9.10	4		05	31	79	05 000
	01	29	79		C 906 196	825.60	1		05	04	79	04 000584018846
E	01	11	79		W7 487 192	100.41	1		05	03	79	01 000098448742
	01	15	79		9 041 422	511.92	1		05	31	79	03 000073503773
A	01	08	79		W7 379 592	43.55	1		05	01	79	01 000133091896
X	01	27	79		W7 221 356	10.00	4		05	31	79	01 000052546342
	01	04	79		9 078 372	.00	4		05	17	79	00 000078180298
	01	04	79		9 078 372	5,468.64	1		05	17	79	21 006078180298
	01	16	79		9 059 849	923.22	1		05	01	79	03 000586222499

Return Completed Form to:

BUILDING SERVICE 32B-J HEALTH FUND
23-25 EAST 26th STREET
NEW YORK, NEW YORK 10010

STATEMENT OF CLAIM
for
Surgical Operation Benefits — Anesthesia Benefits
Major Medical Expense Benefits

ATTACH ORIGINAL BILLS TO THIS FORM (NO COPIES)

Union__________ & Book No. __________

PLEASE PRINT YOUR ANSWERS TO QUESTIONS 1 thru 7.

Social Security No. ☐☐☐☐☐☐☐☐☐

↓ TO BE COMPLETED BY EMPLOYEE ↑

1. Member's name LAST FIRST MIDDLE | Date of Birth Mo.________Day_____Yr._____ | ☐ Male ☐ Female | ☐ Single ☐ Married | ☐ Widowed ☐ Divorced

2. YOUR HOME ADDRESS (NO., STREET, CITY, STATE, ZIP CODE) | Phone number

3. Your Work (Building) Address

4. List family members of your household who are employed, (If none, so state)

Name	Relationship	Name and address of Employer	Family Member's S.S. No.

5. If claim is for a dependent, give: ☐ Male ☐ Female ☐ Single ☐ Married
Name________________Relationship________________Date of Birth________________

6. If an accident was involved, when did it happen? Date________________Time________________
(a) Where________________
(b) How________________
(c) Was or will a claim for Workmen's Compensation be made? ☐ Yes ☐ No

7. Other than the hospital benefits provided under your Blue Cross plan are any hospital, surgical or medical benefits or services provided under any other Group prepayment plan or Group Insurance plan on account of the accident or illness for which this claim is made? ☐ Yes ☐ No
If "Yes," answer the following:

Name and address of Insurance company or organization providing such benefits or services	Amount of benefits or value of services provided Hospital	Surgical	Medical
	$	$	$

I hereby authorize any Insurance Company, Organization, Employer, Hospital, Physician, Surgeon or Pharmacist to release any information requested with respect to this claim and the attached bills. I certify that the information furnished by me in support of this claim is true and correct.

Signed________________ (INSURED EMPLOYEE) ________ (DATE) Also Dependent________________ (IF PATIENT AND NOT A MINOR)

NOTICE — For unreimbursed Covered Medical Expenses incurred because of hospital care or confinement and not fully paid for by your basic Hospital Prepayment Plan, please attach your Blue Cross statement or hospital bill. In addition, if any other Covered Medical Expenses were incurred, and are not recorded below, such as for drugs and medicines requiring a physician's prescription, services of registered nurses, etc., attach itemized bills covering these expenses. Bills for drugs and medicines containing a prescription number need not be initialed by the attending physicians.

9. **Surgeon's Statement**
Patient's name________________Age________
Nature of surgical or obstetrical procedure (Describe fully)________________
Charge for this procedure, $________Date performed________Where________
Your name (Please print)________Degree________Telephone No. (Include Area Code)________
Address________________
Signature________ (DATE) S.S. No.☐☐☐ Employer I.D. No.☐☐ ← MUST BE FURNISHED UNDER AUTHORITY OF LAW →

10. **Anesthetist's Statement**
Patient's name________________Age________
Date anesthesia administered________Charge, $________
Where administered________Did you perform the surgery? ☐ Yes ☐ No
Are you an employee of the hospital, or similar institution, where the anesthesia was administered? ☐ Yes ☐ No
Your name (Please print)________Degree________Telephone No. (Include Area Code)________
Address________________
Signature________ (DATE) S.S. No.☐☐☐ Employer I.D. No.☐☐ ← MUST BE FURNISHED UNDER AUTHORITY OF LAW →

11. **Attending Physician's Statement**
Patient's name________________Age________
Diagnosis________________
Give the dates of treatment by listing the months and checking the appropriate days.

Days	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Month -																															
Month -																															

Total charge for all treatments shown above, exclusive of any surgical expense, $________
Your name (Please print)________Degree________Telephone No. (Include Area Code)________
Address________________
Signature________ (DATE) S.S. No.☐☐☐ Employer I.D. No.☐☐ ← MUST BE FURNISHED UNDER AUTHORITY OF LAW →

AUTHORIZATION TO PAY DOCTOR(S): I hereby authorize payment to the doctor(s) named below the indicated benefits otherwise payable to me but not to exceed the doctor(s) charges. I understand I am financially responsible to the doctor(s) for charges not covered by this authorization.

Dr. ________________ (PRINT—NAME OF SURGEON) for surgery Dr. ________________ (PRINT—NAME OF PHYSICIAN) for anesthesia

Dr. ________________ (PRINT—NAME OF PHYSICIAN) for treatments in hospital, office or elsewhere

Date________________19_____ Signed (Insured Employee)________________

AUTHORIZATION TO PAY HOSPITAL: I hereby authorize payment to (Print name of hospital)________________ of the benefits otherwise payable to me as determined by the Building Service Welfare Fund for hospital expenses covered under the Medical Expense Insurance-Extended Coverage Plan but not to exceed the balance due of the hospital's regular charges for this period of hospitalization. I understand I am financially responsible to the hospital for charges not covered by this authorization.

Date________________ 19_____ Employer I.D. No. ☐☐

A-116b Signed (Insured Employee)________________

Appendix G

Program Benefit Calculations Based On 15% and 6% Discount Rates

Program Savings From Reduced Medical Resources Utilization:
Confirmed - Not Confirmed Comparison Based on A 15% Discount Rate

	Confirmed (Group B)			Not Confirmed (Group C)		
Cost	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Physician Visits	$ 30,340	$ 88	203	$ 27,463	$ 80	184
Hospitalization	448,923	1,313	1,954	237,069	693	1,560
Surgical Fees - Original Surgery	193,969	582	481	90,302	270	462
Anesthesiology Fees - Original Surgery	48,226	177	128	19,534	64	129
Surgical Fees - Related Surgery	15,366	45	212	20,250	59	317
Anesthesiology Fees - Related Surgery	4,273	12	59	4,345	13	60
Diagnostic and Laboratory	10,277	30	166	5,275	15	53
Therapies and Nursing	7,347	21	161	1,293	4	36
Drugs and Prostheses	6,637	19	90	7,493	22	167
TOTAL COST	$765,258	$2,238	2,669	$413,024	$1,208	2,351

Program Savings From Reduced Medical Resources Utilization:
Confirmed, Surgery - Not Confirmed, Consultant's Recommendation Followed Comparison
Based On A 15% Discount Rate

	Confirmed, Surgery (Group D)			Not Confirmed, Consultant's Recommendation Followed (Groups F, G, and J)		
Cost	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Physician Visits	$ 28,413	$ 93	211	$ 24,112	$ 83	195
Hospitalization	448,899	1,472	2,014	159,558	548	1,398
Surgical Fees - Original Surgery	193,969	655	461	59,812	209	440
Anesthesiology Fees - Original Surgery	48,770	208	113	11,574	43	102
Surgical Fees - Related Surgery	15,288	50	224	15,510	53	261
Anesthesiology Fees - Related Surgery	4,216	14	63	3,575	12	59
Diagnostic and Laboratory	9,446	31	173	4,366	15	54
Therapies and Nursing	7,351	24	170	1,290	4	40
Drugs and Prostheses	5,046	17	68	4,003	14	79
TOTAL COST	$761,397	$2,496	2,715	$283,800	$ 975	2,044

Program Savings From Reduced Productivity Loss:
Confirmed - Not Confirmed Comparison Based On A 15% Discount Rate

Cost	Confirmed (Group B)			Not Confirmed (Group C)		
	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Hospitalization	$ 65,941	$193	234	$ 34,340	$100	218
Main Job	171,657	502	754	76,555	224	861
Overtime - Main Job	4,265	12	71	2,628	8	53
Additional Job	1,026	3	51	0	-	-
Homemaker	47,414	134	581	21,908	64	39
Restricted Activity	16,068	47	360	19,382	58	29
Relative Workloss	8,779	26	240	2,042	6	39
Outside Household Help	806	2	34	686	2	26
Out-of-pocket (Travel) Cost For Obtaining Medical Care	2,915	9	16	2,012	6	14
Indirect (Time Loss) Cost For Obtaining Medical Care	6,274	18	23	4,366	13	23
TOTAL COST	$326,145	$954	1,396	$164,369	$481	1,212

Program Savings From Reduced Productivity Loss:
Confirmed, Surgery - Not Confirmed, Consultant's Recommendation Followed
Comparison Based On A 15% Discount Rate

Cost	Confirmed, Surgery (Group D)			Not Confirmed, Consultant's Recommendation Followed (Groups F,G, and J)		
	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Hospitalization	$ 68,676	$ 212	231	$ 23,499	$ 81	197
Main Job	171,825	563	778	55,672	191	876
Overtime - Main Job	4,273	14	75	1,576	5	46
Additional Job	74	0.2	4	0	-	-
Homemaker	44,360	145	581	19,140	66	452
Restricted Activity	10,450	34	288	12,008	41	361
Relative Workloss	8,390	28	254	1,370	5	26
Outside Household Help	807	3	37	684	2	29
Out-of-Pocket (Travel) Cost For Obtaining Medical Care	2,743	9	16	3,610	12	24
Indirect (Time Loss) Cost For Obtaining Medical Care	5,964	20	23	1,498	5	13
TOTAL COST	$317,562	$1,041	1,429	$119,057	$409	1,128

Program Savings From Reduced Medical Resources Utilization:
Confirmed - Not Confirmed Comparison Based On A 6% Discount Rate

Cost	Confirmed (Group B)			Not Confirmed (Group C)		
	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Physician Visits	$ 31,625	$ 92	210	$ 28,184	$ 82	186
Hospitalization	472,538	1,382	2,064	249,442	729	1,642
Surgical Fees - Original Surgery	205,132	616	509	95,969	287	494
Anesthesiology Fees - Original Surgery	51,063	188	134	20,953	69	138
Surgical Fees - Related Surgery	16,032	47	222	21,628	63	339
Anesthesiology Fees - Related Surgery	4,504	13	63	4,998	15	63
Diagnostics and Laboratory	10,530	31	167	5,451	16	55
Therapies and Nursing	7,526	22	163	1,408	4	40
Drugs and Prostheses	6,975	20	93	7,806	23	179
TOTAL COSTS	$805,925	$2,357	2,805	$435,839	$1,274	2,493

Program Savings From Reduced Medical Resources Utilization:
Confirmed, Surgery, Not Confirmed, Consultant's Recommendation Followed Comparison
Based On A 6% Discount Rate

Cost	Confirmed, Surgery (Group D)			Not Confirmed, Consultant's Recommendation Followed (Groups F,G, and J)		
	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Physician Visits	$ 29,800	$ 98	218	$ 24,697	$ 85	198
Hospitalization	471,574	1,546	2,126	168,830	580	1,461
Surgical Fees - Original Surgery	205,132	693	488	63,965	224	472
Anesthesiology Fees - Original Srugery	51,639	220	119	12,354	46	108
Surgical Fees - Related Surgery	16,002	52	234	16,543	57	277
Anesthesiology Fees - Related Surgery	4,483	15	66	4,284	15	62
Diagnostics and Laboratory	9,699	32	175	4,503	15	55
Therapies and Nursing	7,530	25	173	1,404	5	43
Drugs and Prostheses	5,325	17	72	4,161	14	80
TOTAL COSTS	$801,184	$2,627	2,852	$300,741	$1,033	2,153

Program Savings From Reduced Productivity Loss:
Confirmed - Not Confirmed Comparison Based On A 6% Discount Rate

Cost	Confirmed (Group B)			Not Confirmed (Group C)		
	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Hospitalization	$ 71,413	$ 209	260	$ 38,460	$112	240
Main Job	196,965	576	869	87,576	256	1,001
Overtime - Main Job	4,826	14	81	2,986	9	59
Additional Job	1,271	4	58	0	-	-
Homemaker	52,017	152	603	25,124	73	460
Restricted Activity	18,911	55	370	21,938	64	443
Relative Workloss	13,857	41	283	2,438	7	46
Outside Household Help	915	3	41	780	2	30
Out-of-Pocket (Travel) Cost For Obtaining Medical Care	3,188	9	19	2,411	7	18
Indirect (Time Loss) Cost For Obtaining Medical Care	7,122	21	28	4,954	14	27
TOTAL COST	$370,521	$1,083	1,556	$186,667	$546	1,338

Program Saving From Reduced Productivity Loss: Confirmed, Surgery - Not Confirmed, Consultant's Recommendation Followed Comparison Based On A 6% Discount Rate

Cost	Confirmed, Surgery (Group D)			Not Confirmed, Consultant's Recommendation Followed (Groups F,G, and J)		
	Total	Mean	Standard Deviation	Total	Mean	Standard Deviation
Hospitalization	$ 73,518	$ 241	268	$ 25,834	$ 89	213
Main Job	196,595	645	897	64,905	223	1,025
Overtime - Main Job	4,834	16	86	1,760	6	50
Additional Job	79	0.3	5	0	-	-
Homemaker	48,972	161	671	23,594	81	562
Restricted Activity	12,450	41	288	15,211	52	447
Relative Workloss	13,948	46	299	1,755	6	31
Outside Household Help	952	3	43	778	3	33
Out-of-Pocket (Travel) Cost For Obtaining Medical Care	2,991	10	18	1,920	7	17
Indirect (Time Loss) Cost For Obtaining Medical Care	6,969	23	27	4,094	14	28
TOTAL COST	$361,308	$1,185	1,596	$139,851	$481	1,258

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